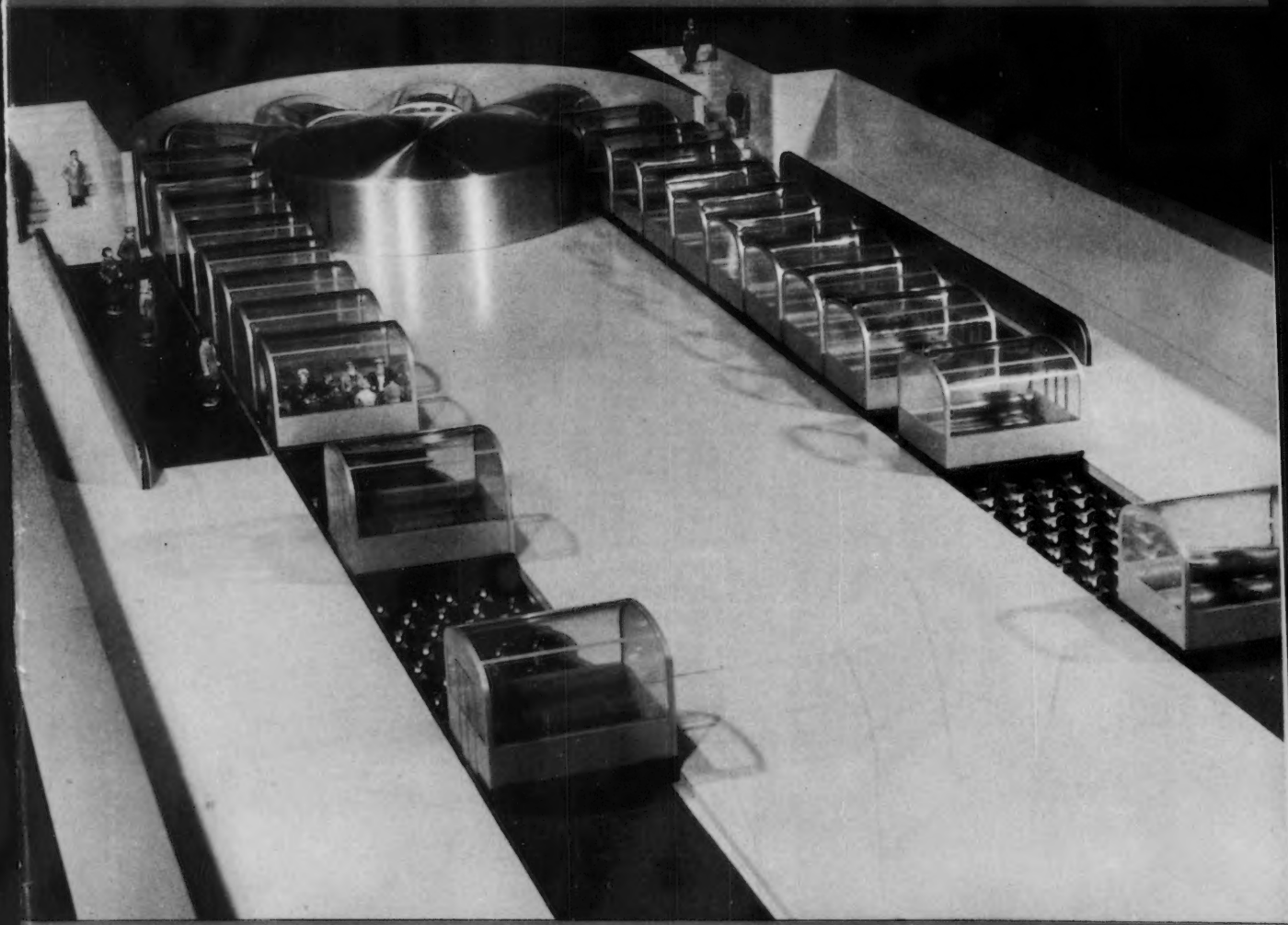
APRIL, 1955

Traffic Engineering



Model of Passenger Conveyor Which Will Replace New York's Shuttle Subway

- A Discussion of Warrants for Scramble Signals
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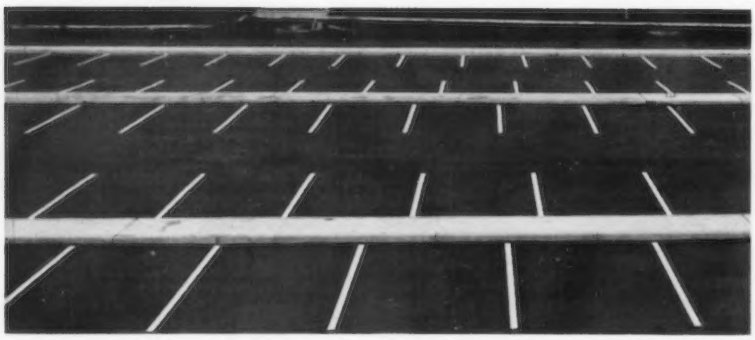

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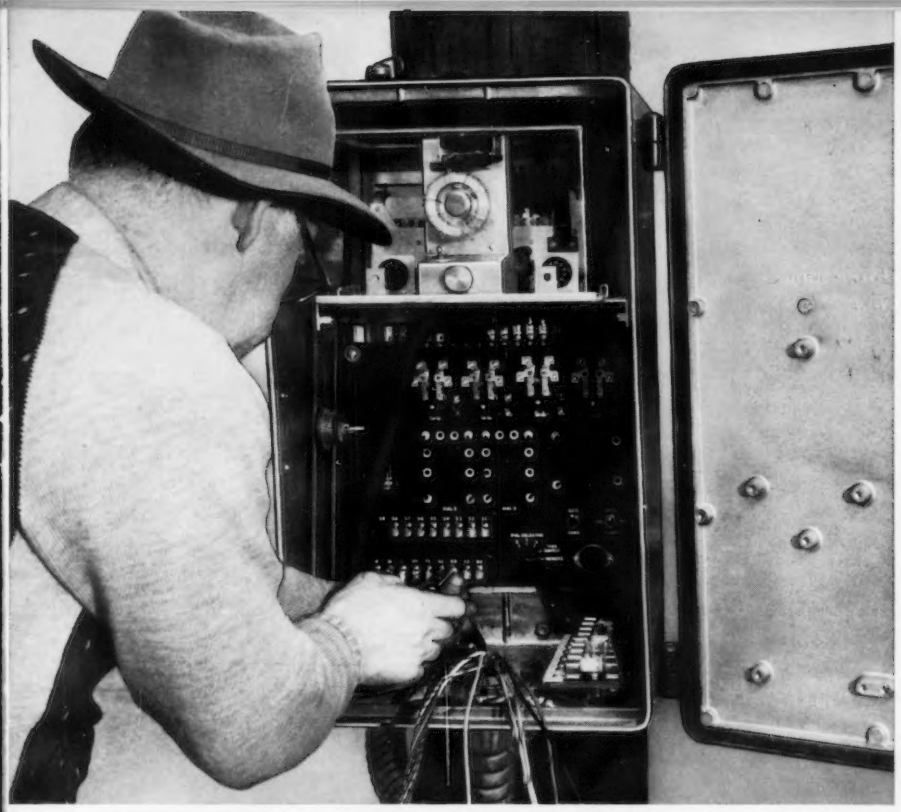

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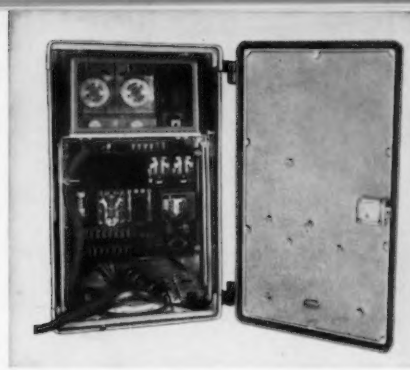

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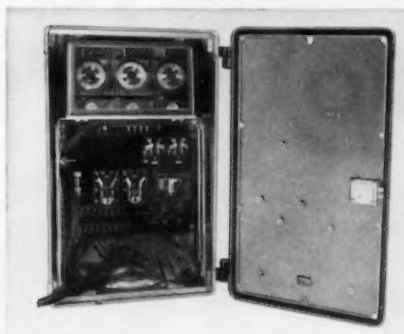

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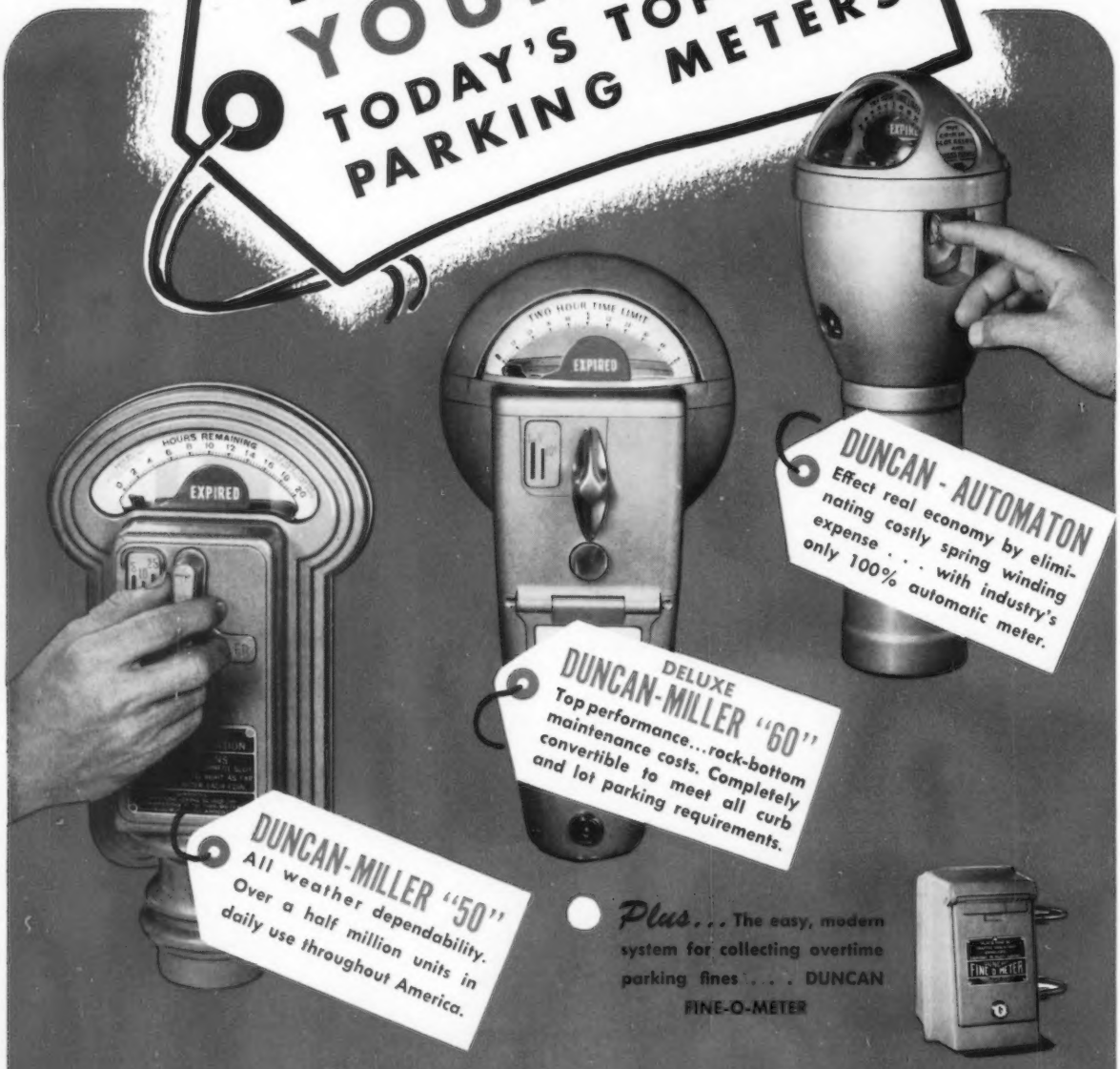

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COVER: Model of the conveyor belt shuttle system proposed to replace the present subway shuttle between Times Square and Grand Central Station in New York City. Passengers walk onto the loading platform moving at 1½ mph and step into seven foot square 10-passenger cars moving at the same speed. After leaving the loading area the cars pass over a series of pneumatic wheels rotating at increasing rates of speed which comfortably accelerates them to a speed of 15 mph. The cars then move on a high speed belt to a similar deceleration section in advance of the unloading area. For more details on this interesting project, be sure to read Colonel Bingham's article "A New Development in Transportation" in this issue.

DEFINITION: Traffic Engineering is that phase of engineering which deals with the planning and geometric design of streets, highways, and abutting lands, and with traffic operation thereon, as their use is related to the safe, convenient, and economic transportation of persons and goods.

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PARKING METERS

Frankly Speaking

AMONG THE RESOLUTIONS adopted at the last Annual Meeting was one calling for the stimulation of greater consideration by the membership of matters of vehicular performance, highway design and driver characteristics for the purpose of achieving greater compatability among those elements. It was further resolved "that the Institute of Traffic Engineers develop the closest possible relationship and understanding with related professions, in order to bring vehicular technology, highway development and driver performance into balance."

The preamble to this timely resolution pointed out the significant advancements by the automotive industry in the design and performance of modern vehicles. Recognition was given to modern limited access highway design which permits the full use of performance capabilities of the modern vehicles but, in contrast, it was suggested that there exists relatively little possibility in improving the total performance potential of the average motorist. It was further stated that community economy and welfare is threatened by existing incompatibilities of the highway, vehicle and the driver.

Most recent estimates of increases in population, registration and motor vehicle usage indicate that not only have we run out of time to catch up with current highway deficiencies, but our present program would indicate that we are falling further and further behind each year.

Presidential leadership has resulted in the Clay Committee Report and a request has been made of Congress for what appears to be an almost financially fantastic national highway program.

The National Committee on Urban Transportation has listed as one significant research objective the better determination of standards by which we can realistically measure street and highway performance levels. Between the lines, the project outline seems to suggest that, consciously or unconsciously, we may have in the past been expecting too much in terms of speed, comfort and freedom from congestion from our "dream" highways, at least in urban areas.

Certainly all of us in the traffic engineering profession have at one time or another been intimately acquainted with highway or parking facilities that have been antiquated by changing design of the motor vehicle such as length, width, weight, and performance characteristics.

The imbalance between highway design standards of 10 or 15 years ago contrasted to current vehicle design and vehicle performance extremes has accelerated the depreciation of highway facilities and has increased the dollar amount of current street and highway deficiencies.

A quick review of 1955 passenger car dimensions and turning characteristics reveals the extreme length of 242.5 inches and the extreme width of 80 inches. In the extreme case the difference between wheel base and overall length is 94.3 inches. Turn circles for the twelve most popular makes of automobiles vary from 40 to 46 feet in diameter with at least one extreme of 52 feet.

Publicized horsepower ratings well above 200 are now common and more and more attention is being given to stock car road races and speed trials.

A sharp contrast can be drawn between the growing congestion of highway facilities, the growing demand on the part of enforcement and safety officials for more rigid laws particularly relating to speed, and the beautiful performance potential of the modern car, which merely by its beauty of line and smooth response to the driver's merest impulse simply demands to be given expression on the highway.

All of the above would seem to raise serious questions in the minds of the highway designer and the traffic engineer. What vehicle design factors should we anticipate on our highways, say ten years from now, when and if an accelerated Presidential highway program has been completed? What performance characteristics shall we plan for?

If we do not really know the answers to these questions isn't it about time that the traffic engineer, the highway engineer and the automotive engineer developed a little closer relationship in conformity with the resolution of the 25th Annual Meeting?

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A Discussion of Warrants for Scramble Signals

By Ross T. Shoaf (Mem., ITE)

City Traffic Engineer
Division of Traffic Engineering, Department of Public Works
San Francisco, California

(This paper was presented at the 1955 Road Conference at the Institute of Transportation and Traffic Engineering, University of California on February 3, 1955. An article entitled "Scramble in San Francisco," by Mr. Shoaf and his assistant traffic engineer, William Marconi, appeared in the November issue of TRAFFIC ENGINEERING. *Since this subject has created so much controversy among both professional and lay people, it is felt that a discussion of warrants is very timely.* — EDITOR.)

Better Use of Existing Streets Needed

THE MAJOR QUESTION in every American city today is "How to make better use of existing streets." It is generally recognized that not only do freeways take many years before relief can be realized but freeways, when completed, must be served by the most efficient street system to be completely useful. As a result of trying to make better use of existing streets every type of traffic control conceivable is being put into use and tried. In nearly every instance such regulation means taking away personal privileges, in order to benefit the community as a whole.

One-way streets, turning prohibitions, no parking, no stopping, channelization and other types of controls are being introduced. These controls are being accepted by the public generally, many times reluctantly and with personal loss because it is realized that they do make traffic operations more efficient and reduce the general economic loss of all types of transportation. This acceptance is both logical and necessary because far greater costs and loss of taxes would be encountered by choosing the only other alternative of new and wider streets in the heart of the downtown areas.

"Scramble" traffic signals is one of many controls that has received more than passing consideration in this search for means of making better use of our existing streets. This type of control separates pedestrian and vehicular conflicts

Fig. 1
Bird's eye view of Montgomery and Bush Streets, during the pedestrian or "scramble" phase of the signal cycle. It is apparent that less than 25% of the pedestrians are crossing diagonally.

Fig. 2
Pedestrian's eye view of Montgomery and Bush Streets during the scramble period, illustrating the appearance of maximum use of diagonal.

by providing a completely separate pedestrian interval for movement across the intersection in any direction. The object of the control is the reduction of conflicts which in itself is in the direction of efficiency, providing other more efficient operations do not have to be sacrificed.

Montgomery Street Trial Ideal for Study

San Francisco, along with other American cities, has had a trial installation of "scramble" signals in operation on Montgomery Street at California, Pine, Bush and Sutter Streets since March 4, 1954. These test locations have been ideal for study purposes because practically every combination of traffic problems to be found elsewhere in the central area are presented under existing "scramble" conditions. There are one-way and two-way streets; streets with and without transit; two and four lane two-way streets; as well as two, three and four lane one-way streets. In addition, the three principal characteristics favorable to "scramble" are present. These are high pedestrian volumes, heavy turning movements and narrow streets. The streets are at least narrow for San Francisco although not as narrow as streets in many cities where "scramble" is claimed to be successful.

Record of "Scramble" in San Francisco

With an actual operation of "scramble" to study, San Francisco has made the only detailed economic study known to date on this type of signal control. This report was released on May 7, 1954, and was based on a comprehensive time-delay study made before and after the installation. The results of the study showed that for the test area the average travel time for all motorists using the system increased an average of 48.4%. Montgomery Street alone increased 59% and all cross streets experienced increases from 13% for eastbound California Street to 95% for motorists on Bush Street.

The economic loss to motorists due to "scramble" at these four intersections at a conservative cost of 2c per minute is $100,000 per year. While this cost is not of the out-of-pocket type and thus not readily felt by motorists it is nevertheless very real and represents the opposite of making better use of our existing streets.

An opinion survey also conducted in conjunction with the economic survey showed that while "scramble" was acceptable to both motorists and pedestrians the increase in delay was not recognized. This was a natural result because on the one hand the increased delay due to "scramble" in the test installation was very small in comparison to the total delay for any trip and therefore not readily recognizable, while the removal of restrictions to diagonal walking and reduction of conflicts between motorists and pedestrians was obvious in extreme proportions.

It was to be expected in light of this acceptance that tremendous demand would be forthcoming from the public

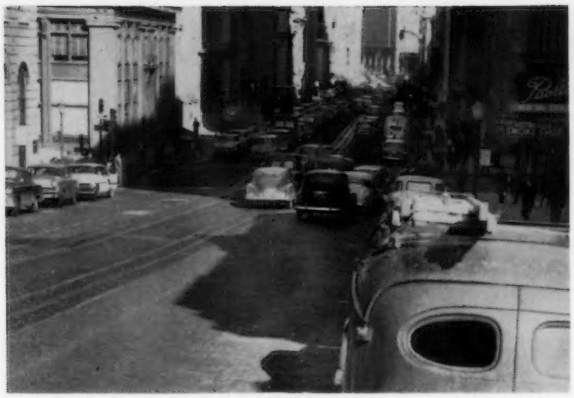


Fig. 3
Montgomery and California Streets, showing vehicular delays caused by the "scramble" cycle.

for immediate extension of "scramble" similar to the type of demand that develops for the installation of traffic signals, stop signs, school crossings and many other types of traffic control. However, this type of extreme pressure has not arisen, apparently because too few people too seldom received the few benefits that can be realized. Figure 1 shows that about 25% of the pedestrians walk diagonally and they receive doubtful benefits; on the other hand, it is well known that there is an actual loss of time for the 75% who cross the street at right angles.

Rating of Signalized Intersections for "Scramble"

Based upon studies of these varied combinations of traffic conditions in the trial system and typical of other sections in the district, a rating for effectiveness for "scramble" at other locations has been assumed in San Francisco.

This rating is purely an abstract number showing those intersections where "scramble" will cause the least adverse conditions. The method of rating takes into account vehicular volumes including turning movements, pedestrian volumes, and freedom with which traffic moves.

The priority rating will vary directly with the number of conflicts between turning vehicles and pedestrians and inversely with the number of lanes available without towaway and the ratio of through traffic to total traffic. The off-peak period without towaway has been selected because the peak period generally having more lanes available, and therefore more capacity is less favorable to "scramble." However, this assumed formula, if correct, should apply to the peak period simply by varying the number of free-moving lanes and the traffic volumes.

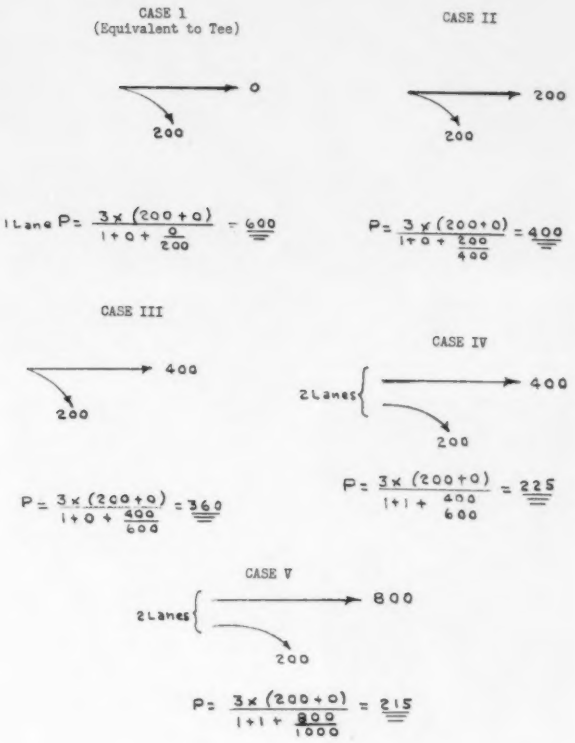
The higher rating by this method, the less added delay is to be expected by installation of "scramble" system. The formula assumed is as follows:

Assume Formula

$$\text{Priority} = \frac{\sqrt{P}\,(\sqrt{R} + f\sqrt{L})}{1 + L + \frac{\sqrt{S}}{\sqrt{T}}}$$

V = Aver. Hourly Pedestrian Volume (in thousands)
VR = Aver. Hourly Right Turns (Vehicles)
VL = Aver. Hourly Left Turns (Vehicles)
VS = Aver. Hourly Straight Movements (Vehicles)
VT = Aver. Hourly Total Volumes
L = No. of Free moving lanes for straight traffic
f = Left Turn Factor varying from .167 for 2-way traffic to 1.00 for 1-way traffic

Examples (Assume Ped. Vol. = 3,000/hr.)



Before leaving the discussion on this formula I want to stress and emphasize that the formula represents thinking only based upon experience in San Francisco. It has not been checked and it is offered only with the hope that other engineers will pick up the discussion of scramble and add to our knowledge.

"Scramble" is Not Better Street Use

From a purely traffic standpoint therefore, "scramble" is not the answer to "How to make better use of existing streets." Trafficwise, it will actually undo a portion of the good gradually being felt by the institution of one-way streets, turn prohibitions, etc., because "scramble" causes added delay. Widespread expansion will increase the economic loss many times the $100,000 per year loss now being created on Montgomery Street and cancel to a large extent the large expenditures being made to improve traffic conditions.

Finally, it can be expected that far greater losses will be realized to other than motorists as "scramble" invades the retail center of the downtown area. Business areas are far more sensitive to traffic congestion than are financial areas because cost of operation, transit patronage and sales for other types of business are quick to respond to changes in traffic movement.

To coin an expression pointing up the results of this study it might be said that

"'Scramble' is the caviar of traffic control but today we cannot afford the luxury of jaywalking legally."

A New Development in Transportation

By Colonel S. H. Bingham, AUS (Ret.)
Executive Director and General Manager
New York City Transit Authority

(This paper was delivered by Colonel Bingham at a meeting of the Harvard Engineering Society at the Harvard Club in New York on February 2, 1955. — EDITOR.)

About the Author: Colonel Bingham began his career in the transit industry in 1915 with one of the subway companies now part of the New York City transit system. He worked in every department of the railroad, becoming technical assistant to the president and later technical advisor.

A veteran of two World Wars, he received many decorations from this country and others for his outstanding work. During World War II, he held important assignments in planning and directing military railway operations in England, Africa and Europe. He developed the designs for the special LST-2 for carrying fully loaded freight trains, and he developed the famous "breathing bridge" which enabled landing such equipment at any stage of the 28-foot tide. He later supervised the operation of over 50,000 miles of railways in five European countries.

Returning to the New York City transit system in 1945, he became general superintendent in charge of maintenance and operations. In 1947 he was made a commissioner on the Board of Transportation, the first person to be appointed to such a post from the ranks, and in 1950 he was named chairman of the board. He was appointed to his present position in 1953 when the New York Transit Authority took over operation of the city-owned transit facilities.

Many cities in the United States and in several foreign countries have called upon Colonel Bingham for counsel on their transportation problems. He is a licensed professional engineer and a member of the American Society of Mechanical Engineers, the Institute of Transport of Great Britain and the Institute of Engineers in Chile. He recently received an honorary L.L.D. from Fordham University and an honorary Doctor of Engineering from Catholic University of Chile.

BEFORE FOCUSING on the subject of major interest — the conveyor system between Grand Central and Times Square—I would like to take a few minutes to give you a general picture of our New York City Transit System. The system is owned by the city and operated by the New York City Transit Authority under the provisions of the Transit Authority Act of 1953 and a lease agreement with the city. It includes all the rapid transit lines in the city, all the surface lines in Brooklyn and Staten Island, about half the surface lines in Queens and five bus lines in Manhattan.

I think very few people—including resident New Yorkers—have any real concept of the tremendous scope of this system. The rapid transit lines alone carried over one and one-half billion passengers last year—three times as many passengers as all the Class I railroads in the United States. The length of rapid transit track is 727 miles—longer than the airline distance from New York to Chicago. During the same period our surface lines carried over one-half billion passengers.

We operate 6,734 passenger cars on the rapid transit lines. Passenger cars on all the Class I railroads in the United States total only three times this number. On our surface lines we operate 2,141 buses and 300 trolley cars and trolley coaches.

The vehicles and the rapid transit structures are what the passenger sees. Behind these operations there are three major rapid transit car repair shops, 13 rapid transit car in-

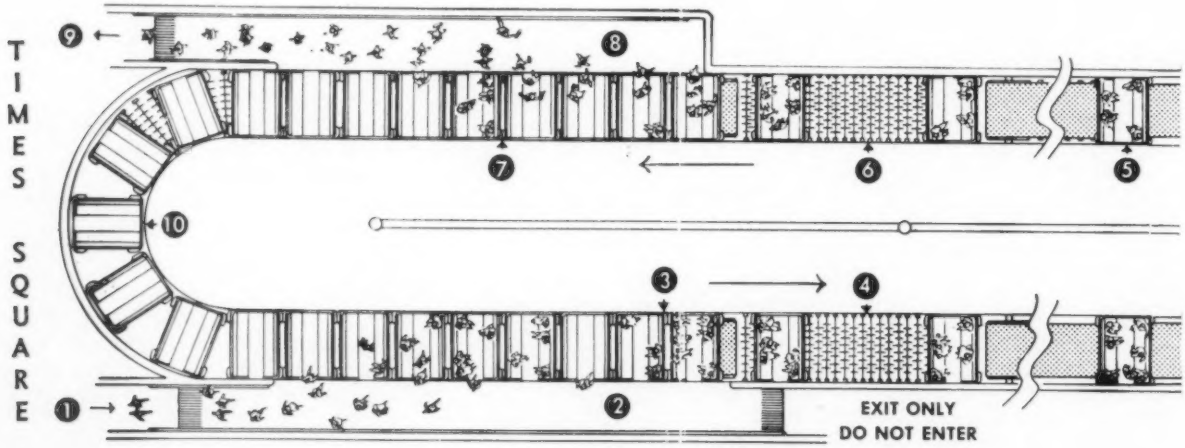


Fig. 1
Proposed Conveyor Belt Shuttle System.

1. Entrance to moving passenger loading platform.
2. Passenger loading platform is rubber conveyor belt moving at 1½ mph speed (moving platform belt: 9′ wide x 60′ long).
3. Car loading belt moves empty passenger cars at same 1½ mph speed of loading platform (belt 5′ x 60′).
4. Accelerator wheels with pneumatic tires, quickly speed loaded passenger cars from 1½ mph to 15 mph (accelerator bank 5′ x 74′).
5. Main line conveyor belts transport loaded passenger cars at 15 mph between stations . (Main line belts: 5′ x 2200′).

spection barns, one of the largest bus repair shops in the world, and 12 bus garages. These shops are equipped to strip a vehicle down to its bare frame, repair or renew any worn or damaged parts, rebuild it, and restore it to service in as good operating condition as new.

This transit system also includes three power plants generating 1.3 billion kilowatt-hours of electrical energy per year to operate BMT and IRT trains. Last year, 630,000,000 kilowatt-hours were purchased from the Consolidated Edison Company for the IND Division. To distribute this energy to the substations and convert it to the 600-volt D.C. current required for train operation, the system operates a distribution network of 910 miles of high tension feeders and 150 rotary and rectifier substations.

A total of 44,000 employees are required to operate and maintain the entire system.

The original cost of this system to the people of the City of New York was approximately one and three-quarter billion dollars. The estimated cost of reproducing it new today is over four billion dollars. These are tremendous figures, but we are running a tremendous business.

Like any living organization the transit system has its continuing requirements for expansion, renewal and improvement. In our case these needs have not been fully met in the past and large parts of our structure and equipment are now 50 years old and still in daily use. It is only in recent years that adequate capital funds have been made available to us for improvement and modernization, and inevitably in a system of this size and complexity, it will be years before the results are fully obvious.

Now let us concentrate on the problem of the shuttle. You must keep in mind that the shuttle was not designed originally for its present use. The original subway, which went into operation in 1904, ran north from City Hall up the East Side to Park Avenue and 42nd Street. It continued west under 42nd Street to Broadway, and then turned north up Broadway.

It was inadequate to serve the needs of the city from its inception and new lines were soon constructed. One of these was an extension of the original line, running north from 42nd Street under Lexington Avenue, and is now the East Side Line of our IRT Division. Another line was on

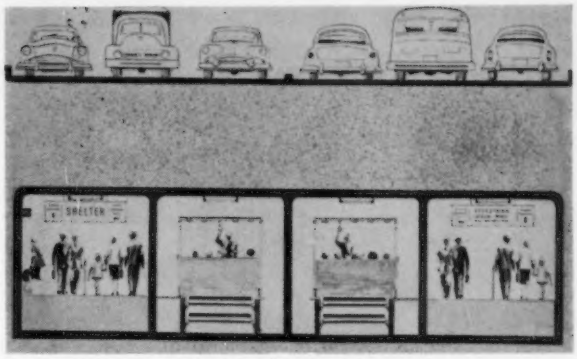


Fig. 2

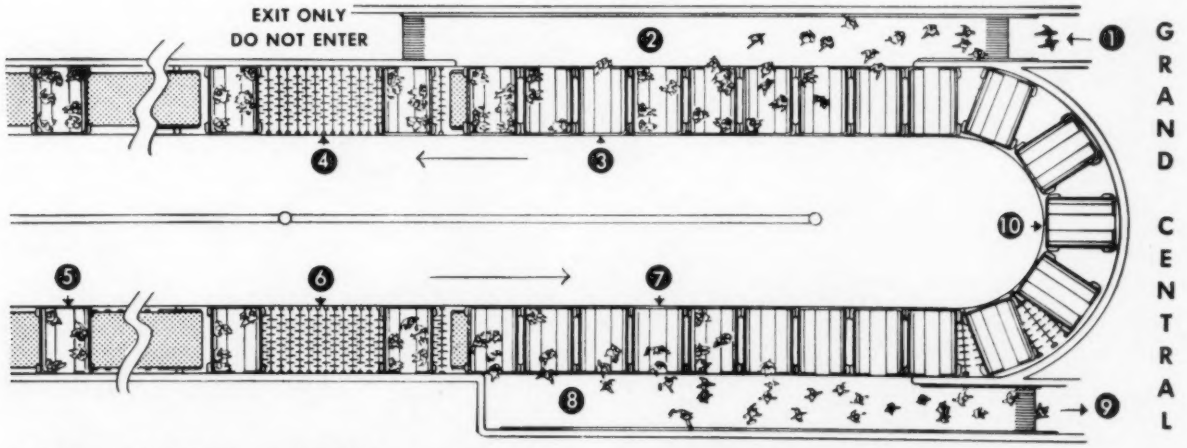
Cross section cutaway of 42nd Street and shuttle tunnel underneath, after belt conveyor subway installation. Creation of cross-town walkways shown at right and left must await allotment of necessary funds.

extension south from 42nd Street under Seventh Avenue, and is now the West Side Line of our IRT Division. This has been referred to as "completing the H." The shuttle became the "cross bar of the H" connecting the East Side and West Side IRT Lines, with access to the Broadway Line of the BMT Division at Times Square.

Shuttle operation between Grand Central and Times Square, in essentially its present form, began in 1918. As might be expected of any operation nearly 40 years old, it is expensive to operate, inconvenient for passengers, and has long been in need of modernization. In studying this problem I sought a more efficient system of handling the traffic on this very important link of our system.

The shuttle is one of the more heavily used sections of the transit system, carrying over 60,000 people per day in each direction. We now operate 10 cars on three of the four existing tracks between Times Square and Grand Central. The four tracks vary somewhat in length, the average being 2,580 feet.

It is a closed operation permitting the application of an entirely new mode of transportation to the shuttle without affecting any other part of the system. It was my desire to devise a way to carry the passengers within the space occupied by the two center tracks of the four-track route, leav-



6. Decelerator wheels slow down speed of loading passenger cars from 15 mph to 1½ mph. (Decelerator bank: 5′ x 74′).
7. Car unloading belt moves cars alongside passenger unloading platform at 1½ mph speed. (Belt 5′ x 60′).
8. Passengers step from cars onto unloading conveyor belt moving at same 1½ mph speed, exit at far end. (Moving platform belt: 9′ x 60′).
9. Exit from moving passenger unloading platform.
10. Empty cars are turned around on banks of powered wheels equipped with pneumatic tires. Car doors open and close automatically as they enter and leave the loading platforms. After turning, the cars repeat the loading, accelerating, deceleration and unloading cycles as they return to the opposite station on the endless track.

ing the outer tracks available for use as walk-ways and air raid shelters.

A conveyor system seemed to offer a possible solution. Its continuous operation offered high capacity in a small space, and the small operating manpower requirements would result in low operating cost.

In the past many passenger conveyor ideas had been suggested and some moving sidewalks and similar schemes actually operated, usually at expositions.

Nothing proposed, or in existence, offered any practical solution for the shuttle.

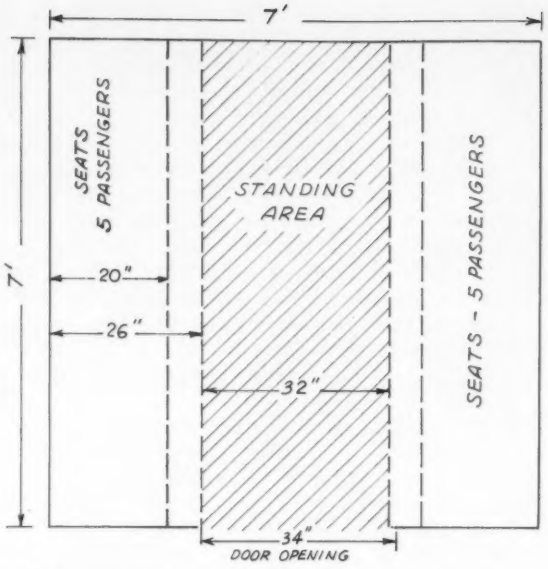
Today we have completely designed, and actually constructed on a small scale, but large enough to carry passengers, a passenger conveyor which I have developed together with the engineers of the Goodyear Tire and Rubber Company and the Stephens-Adamson Manufacturing Company, who have solved many industrial conveyor problems. The contract for the construction and installation of the conveyor equipment, shown diagramatically in Figure 1, has been approved by the Transit Authority and is pending before the Board of Estimate.

The major problems were to develop a passenger conveyor that could accommodate more than 12,000 passengers per hour in each direction with at least present subway standards of safety; would give a speedy, comfortable and convenient ride; would cost less to operate than the present shuttle; and would not cost more than the conventional rehabilitation previously studied for the shuttle. Furthermore, it should be designed to fit into about half the space occupied by the existing shuttle.

The new passenger conveyor under consideration satisfies all of these conditions.

It will carry 16,000 passengers per hour in each direction more safely, and more comfortably, than the present operation. Passengers will make the trip in two minutes, with no waiting for trains. The present shuttle trip is two minutes of running time, plus the waiting time between trains. We estimate that operating and maintenance costs for continuous operation will be about 50% of present shuttle costs. The cost of the conveyor system including the necessary structural changes in the tunnel will be slightly over $5,000,000 which is less than the cost of modernizing the shuttle with conventional subway equipment. Figure 2 shows the proposed conveyor occupying only the two center tracks of the shuttle, with the remaining two trackways to be converted to well-lighted air raid shelters and walk-ways when additional funds become available. Adjoining base-

Fig. 3
Entrance to loading platform.



PROPOSED CONVEYOR CAR - SEATING & STANDING AREAS

STANDING AREA 32" X 80" = 2560"

STANDING AREA PER PASSENGER = 216" $\frac{2560}{216}$ = 11.85 PASSENGERS

SEATED PASSENGERS = 10.

TOTAL PASSENGERS = 21.85

Fig. 4
Conveyor car dimensions.

ments become potential shops that can increase business and tax revenue to the city.

The proposed system differs from previous passenger conveyor proposals in that the passengers will ride in cars carried on belts and on banks of rubber tired wheels.

Conveyor belts are used at low speed for passengers and cars at loading and unloading areas and at high speed to transport the cars from station to station. Banks of wheels, equipped with rubber tires, moving at different speeds, accelerate and decelerate the cars between stations, and carry the cars around all turns.

Passengers at the stations will walk upon the loading belts (Figure 3) which move at a speed of about one and one-half miles an hour. The ten-seat passenger cars, dimensions of which are shown in Figure 4, ride on a belt parallel to and moving at the same rate of speed as the passenger loading belt. Nineteen cars pass the loading area every minute.

Fig. 5
Loading — Passengers step from loading belt into car moving at same speed as loading belt. Doors open automatically when cars arrive at loading platform and close automaticlly prior to clearing this area.

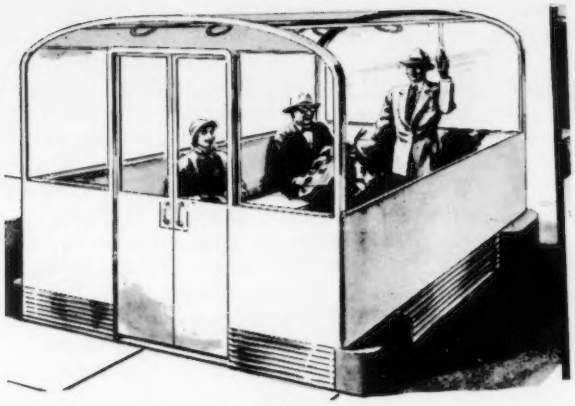


Fig. 6
Accelerating — After leaving the loading platform, passenger cars are comfortably accelerated to 15 mph and ride onto the main line conveyor belt.

Passengers step from the loading belt into a car which is empty as it arrives at the loading area and is moving at the same speed as the loading belt. (See Figure 5.) Doors open automatically when the cars reach the loading area and slowly close prior to the time the cars clear the loading area. The passenger loading belt is nine feet wide and sixty feet long. The car carrying belt is the same length, but only five feet wide. The cars overhang the belt both front and back, and fit snugly against the passenger loading belt. The cars are closely spaced, bumper to bumper, as they pass the loading area.

Once clear of the loading area, the passenger cars are rolled for about 75 feet over a bank of rubber tired accelerator wheels which quickly step up their speed to 15 miles an hour. The acceleration is at the comfortable rate of two and three-quarter miles per hour per second. Spacing between the cars is increased as they are accelerated and they then ride onto the main line conveyor belt, running at 15 miles an hour. (Figure 6.) This endless high speed belt transports the cars on the main run between stations.

At the other station, the passenger cars are slowed down at the same rate in a 75-foot run over a bank of decelerator wheels and are delivered bumper to bumper on a car carrying belt moving at approximately one and one-half miles an hour. The car doors open and passengers step out onto a passenger unloading belt moving at one and one-half miles an hour, the same speed as the cars, and walk or ride to the exit at the end of the belt. The unloading belts are the same dimensions as the loading belts.

The empty car is then carried around a loop at the end of the shuttle system on a bank of wheels and deposited on the low speed belt in the loading area ready to carry passengers. The continuous flow of cars eliminates waiting and platform congestion.

We have designed the system with all master controls concentrated in one room. The operator in this control room will be able to observe all four loading and unloading areas by means of an industrial television system and to start and stop the system. To my knowledge this is the first application of a closed television system to rapid transit operation. The operator will also have control equipment to give him continuous information about the functioning of all essential parts of the entire system.

I first broached this idea to these companies in 1948. It took until 1951 to develop a plan on paper that seemed

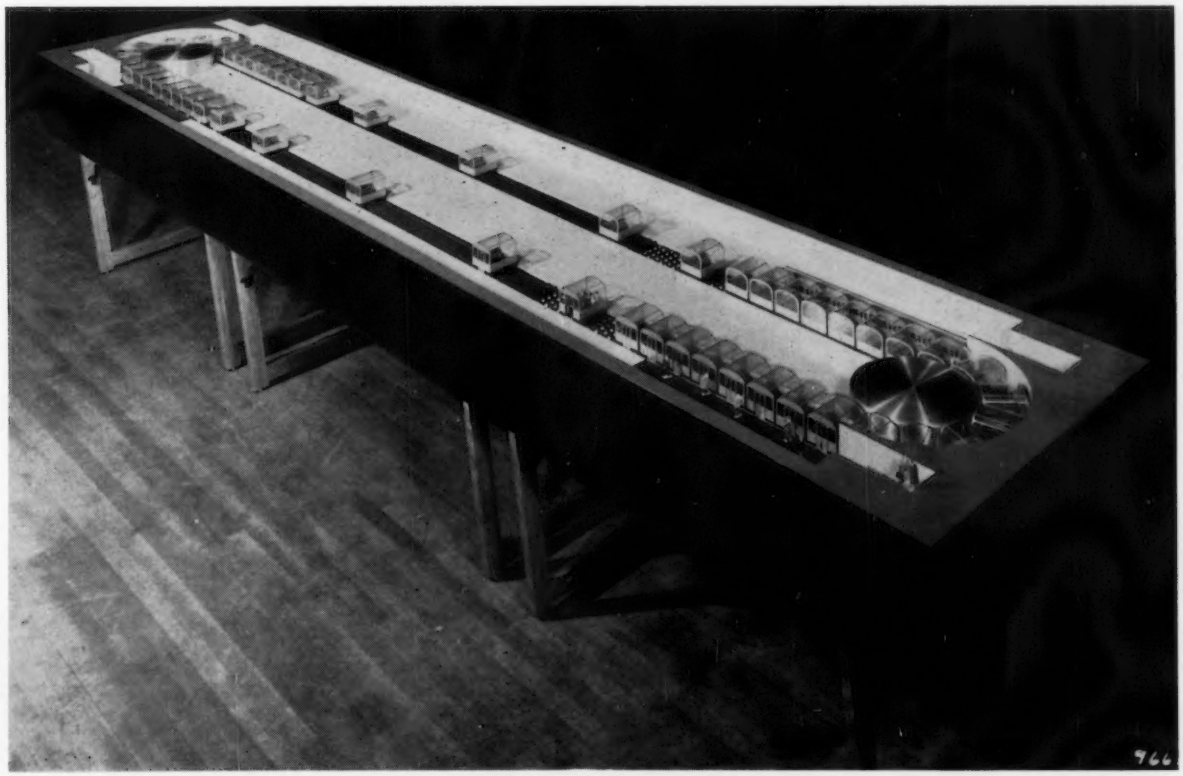


Fig. 7
Working model of the proposed conveyor system.

Fig. 8
Passengers board test cars at factory in Aurora, Illinois, where research was done on a full size mock-up duplicating actual loading and unloading conditions of the completed installation.

workable and overcame the hurdles of safe passenger loading and unloading on moving belts, and on means for accelerating and decelerating the cars.

In April of 1953 a working model, Figure 7, proving the feasibility of the design, was shown in New York City.

During the many months of exhaustive engineering to perfect the conveyor belt subway, full-scale testing equipment to solve human element problems was built.

A rubber conveyor belt sixty feet long and nine feet wide and a mock-up of five full-size cars were set up for human engineering. The cars illustrated in Figure 8 operated adjacent to the belt duplicating actual loading and unloading conditions on the New York City subway belt system.

An accelerating and decelerating system was built to determine the maximum rate at which a passenger car could be speeded up and slowed down on a conveyor belt system.

A model system, to a smaller scale, with one-passenger cars, reproducing all the essential operating conditions of the shuttle system, was constructed and is now in operation in one of the company's plants.

These test installations proved the workability of the subway belt system. Hundreds of tests were made with all kinds of people, old and young, nimble and lame, carrying packages and leading children, and it has been determined that a belt conveyor is the most efficient and least costly means of moving large numbers of people over short distances.

There is no reason why such a conveyor subway system cannot be extended to longer systems with way stations. All that is required for a way station is a bank of decelerating rollers, low speed unloading and loading belts, and accelerating rollers.

No other plan or system of moving belts for passenger transportation has ever been presented which compares with the merits of this design to meet the exacting requirements for safety, economy and efficiency demanded in rapid transit application.

It is extremely flexible, and installations can be made to fit almost any situation. In addition to all these advantages, it operates with a minimum of dust, noise and vibration. The conveyor, it seems to me, is the prototype of the greatest advance in mass transportation we have seen in many years. It adapts for passenger transport the high capacity, low cost methods of conveyor transportation so successfully developed for manufacturing, mining and construction.

While the existing plans are designed for a specific installation, we are studying extensions of this system which can be applied to transit operations of any length with way stations along the route to be served. It is expected that savings comparable to those estimated for the shuttle will be realized in a more exensive system.

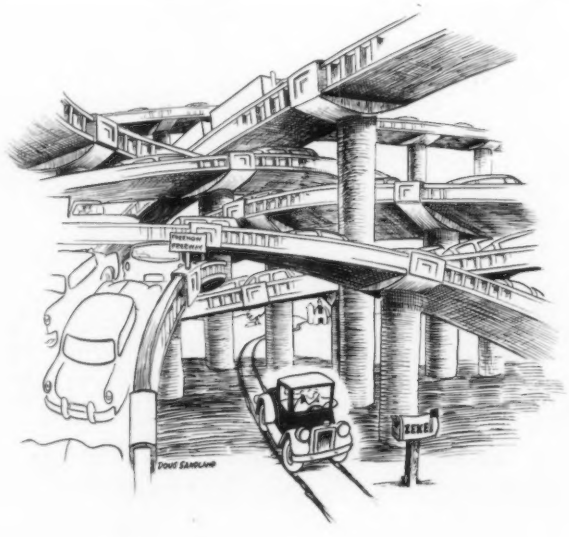
A conveyor system 7,200 feet long with two belts moving in opposite directions and six stations, is under study for a central loop subway in downtown Cincinnati to serve 80 square blocks. It is an excellent means of providing for passenger movement and distribution in a congested downtown area. The cities of Sao Paulo in Brazil, San Francisco, Boston and others have shown an active interest in the system.

Similar and simpler passenger conveyor systems are being developed for large parking fields, airports, railroad terminals, stadiums and other locations where great numbers of people have to be moved quickly and at low cost.

As you well know, mass transportation systems are having a difficult time, chiefly as a result of competition from private cars. Increasing use of private automobiles has taken away passengers, and the resulting traffic congestion has slowed down surface traffic to a crawl. Operating expenses have increased, with labor costs taking a greater share of the declining revenues.

Basically there are only two things that must be done to reverse this trend. One, which is to a large extent beyond the control of the transit operator, is to speed traffic in the streets. There are signs that our city planners and officials are beginning to realize that something must be done to control and channel the flood of private cars. Many are coming to the realization that the encouragement of mass transit offers the best hope for the city to accomplish this at the lowest cost.

The other, is for the transit operator to improve his service and efficiency through application of the best modern technology. The conveyor for human transportation is to my mind one of the brightest hopes for progress in this direction. In industry it has been found that lower costs and greater efficiency can be achieved through the substitution of continuous processes for the older batch operations. We must do the same in mass transportation wherever the volume justifies it. The conveyor system I have described, with appropriate modifications to meet local requirements, does precisely this. It is the first radical advance in mass transportation of people in many years, and I am firmly convinced that we will soon see it widely applied.



A Special Message to Congress On the Nation's Highway System

By Dwight D. Eisenhower, President of the United States

(The controversy over what the Federal Government will do about the highway system of the Nation during the next five to ten years has been receiving a great deal of attention recently, especially following the release last January of a report by The President's Advisory Committee on a National Highway Program — popularly known as the Clay Report. On February 22, 1955, President Eisenhower delivered a special message to Congress, calling for a greatly expanded Federal highway construction program over the next ten years, with recommendations based on the findings contained in the Clay Report. The complete text of this message is presented here. — EDITOR.)

THE WHITE HOUSE

To the Congress of the United States:

OUR UNITY AS A NATION is sustained by free communication of thought and by easy transportation of people and goods. The ceaseless flow of information throughout the Republic is matched by individual and commercial movement over a vast system of inter-connected highways criss-crossing the country and joining at our national borders with friendly neighbors to the north and south.

Together, the uniting forces of our communication and transportation systems are dynamic elements in the very name we bear—United States. Without them, we would be a mere alliance of many separate parts.

The Nation's highway system is a gigantic enterprise, one of our largest items of capital investment. Generations have gone into its building. Three million, three hundred and sixty-six thousand miles of road, travelled by 58 million motor vehicles, comprise it. The replacement cost of its drainage and bridge and tunnel works is incalculable. One in every seven Americans gains his livelihood and supports his family out of it. But, in large part, the network is inadequate for the nation's growing needs.

In recognition of this, the Governors in July of last year at my request began a study of both the problem and methods by which the Federal Government might assist the States in its solution. I appointed in September the President's Advisory Committee on a National Highway Program, headed by Lucius D. Clay, to work with the Governors and to propose a plan of action for submission to the Congress. At the same time, a committee representing departments and agencies of the national Government was organized to conduct studies coordinated with the other two groups.

All three were confronted with inescapable evidence that action, comprehensive and quick and forward-looking, is needed.

First: Each year, more than 36 thousand people are killed and more than a million injured on the highways. To the home where the tragic aftermath of an accident on an unsafe road is a gap in the family circle, the monetary worth of preventing that death cannot be reckoned. But reliable estimates place the measurable economic cost of the highway accident toll to the Nation at more than $4.3 billion a year.

Second: The physical condition of the present road net increases the cost of vehicle operation, according to many estimates, by as much as one cent per mile of vehicle travel. At the present rate of travel, this totals more than $5 billion a year. The cost is not borne by the individual vehicle operator alone. It pyramids into higher expense of doing the nation's business. Increased highway transportation costs, passed on through each step in the distribution of goods, are paid ultimately by the individual consumer.

Third: In case of an atomic attack on our key cities, the road net must permit quick evacuation of target areas, mobilization of defense forces and maintenance of every essential economic function. But the present system in crtical areas would be the breeder of a deadly congestion within hours of an attack.

Fourth: Our Gross National Product, about $357 billion in 1954, is estimated to reach over $500 billion in 1965 when our population will exceed 180 million and, according to other estimates, will travel in 81 million vehicles 814 billion vehicle miles that year. Unless the present rate of highway improvement and development is increased, existing traffic jams only faintly foreshadow those of ten years hence.

To correct these deficiencies is an obligation of Government at every level. The highway system is a public enterprise. As the owner and operator, the various levels of Government have a responsibility for management that promotes the economy of the nation and properly serves the individual user. In the case of the Federal Government, moreover, expenditures on a highway program are a return to the highway user of the taxes which he pays in connection with his use of the highways.

Congress has recognized the national interest in the principal roads by authorizing two Federal-aid systems, selected cooperatively by the States, local units and the Bureau of Public Roads.

The Federal-aid primary system as of July 1, 1954, consited of 234,407 miles, connecting all the principal cities, county seats, ports, manufacturing areas and other traffic generating centers.

In 1944, the Congress approved the Federal-aid secondary system, which on July 1, 1954, totalled 482,972 miles, referred to as farm-to-market roads—important feeders linking farms, factories, distribution outlets and smaller communities with the primary system.

Because some sections of the primary system, from the viewpoint of national interest are more important than others, the Congress in 1944 authorized the selection of a special network, not to exceed 40,000 miles in length, which would connect by routes, as direct as practicable, the principal metropolitan areas, cities and industrial centers, serve the national defense, and connect with routes of continental importance in the Dominion of Canada and the Republic of Mexico.

This National System of Interstate Highways, although it embraces only 1.2 percent of total road mileage, joins 42 State capital cities and 90 percent of all cities over 50,000 population. It carries more than a seventh of all traffic, a fifth of the rural traffic, serves 65 percent of the urban and 45 percent of the rural population. Approximately 37,600 miles have been designated to date. This system and its mileage are presently included within the Federal-aid primary system.

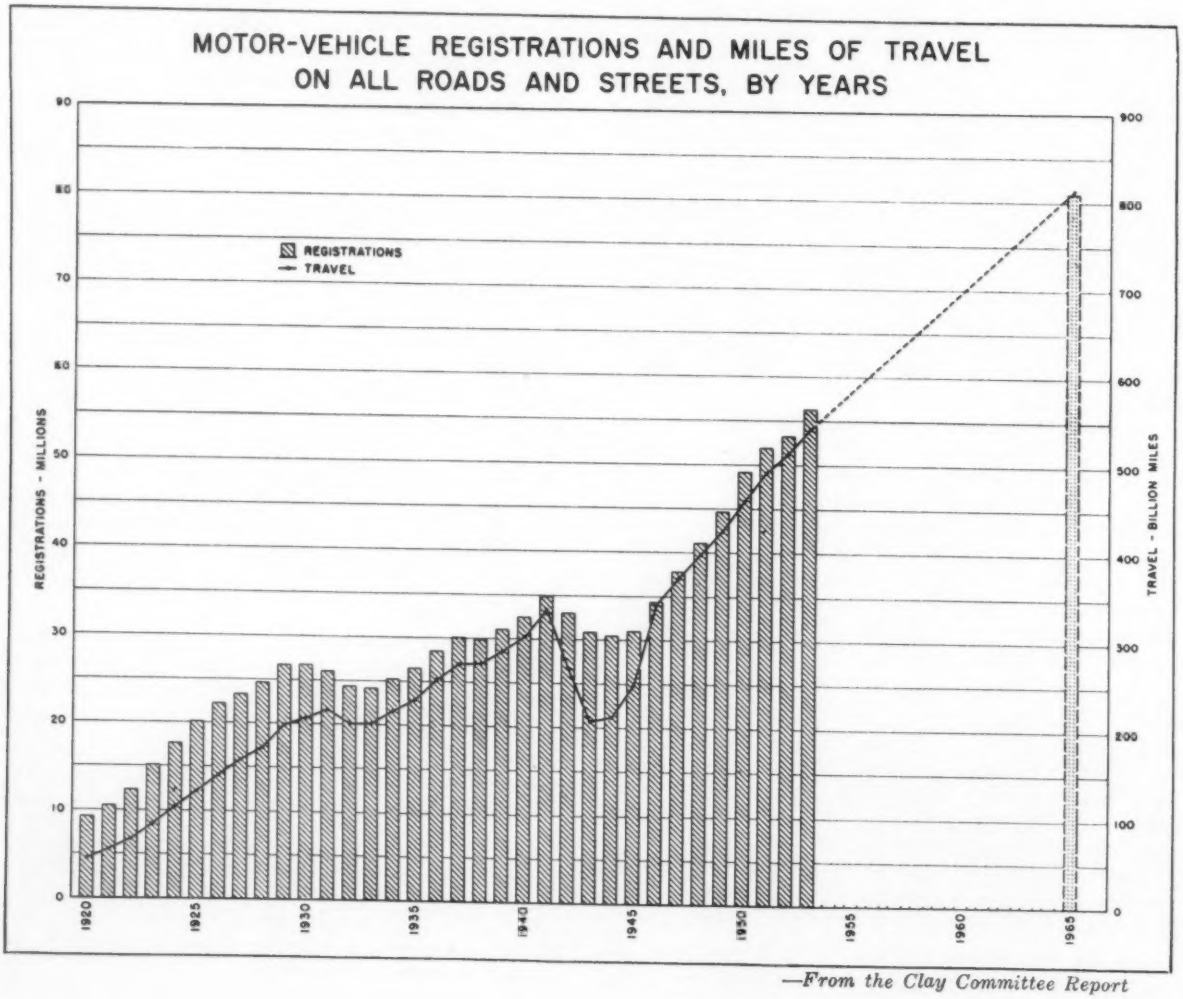
In addition to these systems, the Federal Government has the principal, and in many cases the sole, responsibility for roads that cross or provide access to Federally owned land—more than one-fifth the nation's area.

Of all these, the Interstate System must be given top priority in construction planning. But at the current rate of development, the Interstate network would not reach even a reasonable level of extent and efficiency in half a century. State highway departments cannot effectively meet the need. Adequate right-of-way to assure control of access; grade separation structures; relocation and realignment of present highways; all these, done on the necessary scale within an integrated system, exceed their collective capacity.

If we have a congested and unsafe and inadequate system, how then can we improve it so that ten years from now it will be fitted to the nation's requirements?

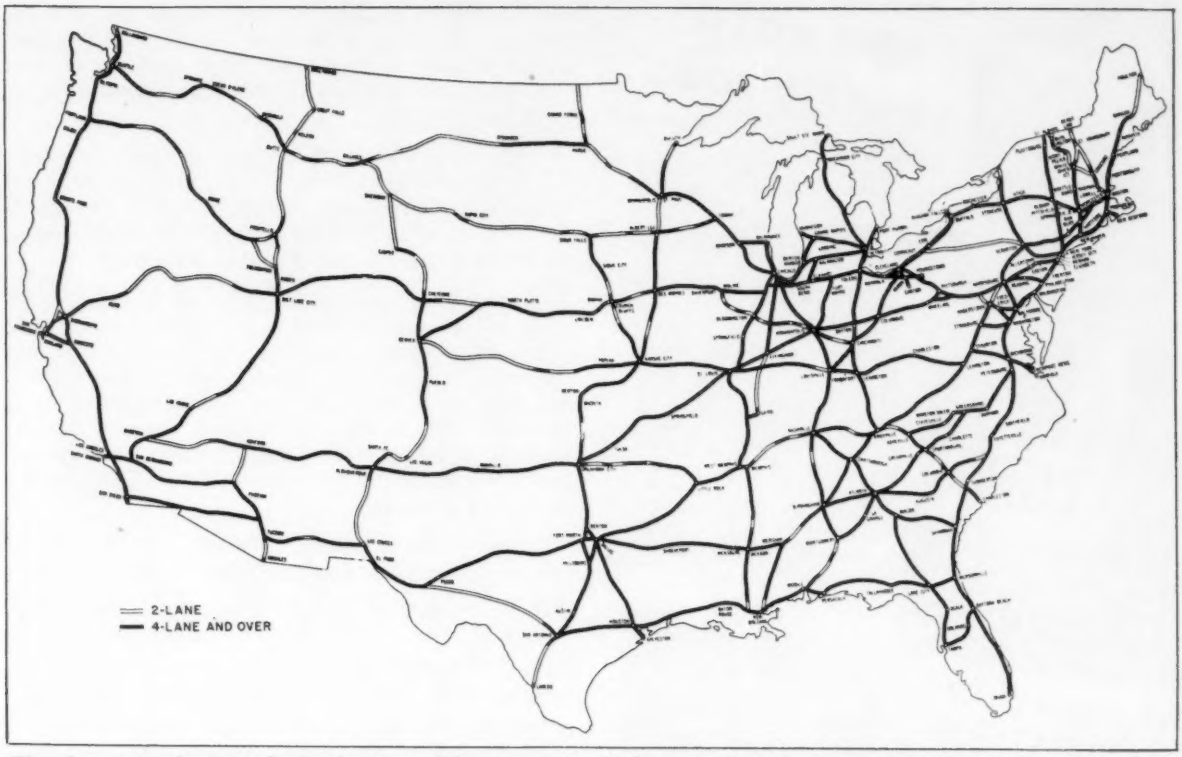
A realistic answer must be based on a study of all phases of highway financing, including a study of the costs of completing the several systems of highways, made by the Bureau of Public Roads in cooperation with the State highway departments and local units of government. This study, made at the direction of the 83rd Congress in the 1954 Federal-aid Highway Act, is the most comprehensive of its kind ever undertaken.

Its estimates of need show that a 10-year construction program to modernize all our roads and streets will require expenditure of $101 billion by all levels of Government.



—From the Clay Committee Report

Proposed Interstate System in 1965



The above map shows predominating type of improvements; it does not show shorter sections of variable width. About three per cent of the mileage shown as four-lane is wider than four-lane, and is principally on those sections in the vicinity of heavily populated urban areas. *—From the Clay Committee Report*

The preliminary 10-year totals of needs by road systems are:

	(Billions)
Interstate (urban $11, rural $12 billion)	$ 23
Federal-aid Primary (urban $10, rural $20 billion)	30
Federal-aid Secondary (entirely rural)	15
Sub-total of Federal-aid Systems (urban $21, rural $47 billion)	68
Other roads and streets (urban $16, rural $17 billion)	33
Total of needs (urban $37, rural $64 billion)	$101

The Governor's Conference and the President's Advisory Committee are agreed that the Federal share of the needed construction program should be about 30 percent of the total, leaving to State and local units responsibility to finance the remainder.

The obvious responsibility to be accepted by the Federal Government, in addition to the existing Federal interest in our 3,366,000-mile network of highways, is the development of the Interstate System with its most essential urban arterial connections.

In its report, the Advisory Committee recommends:

1. That the Federal Government assume principal responsibility for the cost of a modern Interstate Network to be completed by 1964 to include the most essential urban arterial connections; at an annual average cost of $2.5 billion for the ten-year period.

2. That Federal contributions to primary and secondary road systems, now at the rate authorized by the 1954 Act of approximately $525 million annually, be continued.

3. That Federal funds for that portion of the Federal-aid systems in urban areas not on the Interstate System, now approximately $75 million annually, be continued.

4. That Federal funds for Forest Highways be continued at the present $22.5 million per year rate.

Under these proposals, the total Federal expenditures through the ten-year period would be:

	(Billions)
Interstate System	$25.000
Federal-aid Primary and Secondary	5.250
Federal-aid Urban	.750
Forest Highways	.225
	$31.225

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United States will continue to be treated in the budget for these particular subjects.

A sound Federal highway program, I believe, can and should stand on its own feet, with highway users providing the total dollars necessary for improvement and new construction. Financing of interstate and Federal-aid systems should be based on the planned use of increasing revenues from present gas and diesel oil taxes, augmented in limited instances with tolls.

I am inclined to the view that it is sounder to finance this program by special bond issues, to be paid off by the above-mentioned revenues which will be collected during the useful life of the roads and pledged to this purpose, rather than by an increase in general revenue obligations.

At this time, I am forwarding for use by the Congress in its deliberations the Report to the President made by the President's Advisory Committee on a National Highway Program. This study of the entire highway traffic problem and presentation of a detailed solution for its remedy is an analytical review of the major elements in a most complex situation. In addition, the Congress will have available the study made by the Bureau of Public Roads at the direction of the 83rd Congress.

These two documents together constitute a most exhaustive examination of the National highway system, its problems and their remedies. Inescapably, the vastness of the highway enterprise fosters varieties of proposals which must be resolved into a national highway pattern. The two reports, however, should generate recognition of the urgency that presses upon us; approval of a general program that will give us a modern safe highway system; realization of the rewards for prompt and comprehensive action. They provide a solid foundation for a sound program.

DWIGHT D. EISENHOWER

Parking Space Developments Around the Nation

By The Editorial Staff

New developments affecting the financing and construction of off-street parking facilities are regularly reported by the states and cities throughout the country. The activities in the several states described here are the latest which have come to our attention as we go to press.

INDIANA: Passed by the Indiana Senate and sent to the House was a bill to allow smaller cities to use on-street parking meter funds to create off-street parking facilities.

Senator Earl M. Utterback, Kokomo Democrat, one of the sponsors of the measure, said additional parking facilities are needed badly in several cities which are unable to float revenue bonds without pledging on-street parking meter funds.

The bill would apply to cities of the second, third, fourth and fifth class.

In another development, Circuit Court Judge Samuel J. Offutt ruled in favor of the Indianapolis Off-Street Parking Commission in a court test of its constitutionality and said its procedures thus far were valid. Both questions were challenged by a consolidated suit by parking lot operators and property owners.

Although it was announced the case would be appealed to the State Supreme Court, Commission Attorney Arthur H. Northrup said the commission would proceed with its plans.

These plans include preparations to issue revenue bonds for a proposed $710,000 municipal parking garage at Illinois and Maryland streets.

As another step in its plans, the commission in late February received bids to lease or construct a parking garage on a site it owns at the southwest corner of Alabama and Washington streets.

KANSAS: A bill to broaden the powers of first class cities for off-street parking facilities was introduced in the Kansas Senate by its committee on municipalities.

Under terms of the measure, first class cities could pledge revenue from both on-street and off-street parking meters to retire revenue bonds issued to pay for off-street parking. On-street parking meter revenue now can only be used if off-street revenue is not enough to meet bond paymnts and interest.

First class cities would be given fee simple title to land acquired for off-street parking facilities. The cities could use the land for other public purposes in the future if it were no longer desirable for parking facilities.

MARYLAND: Baltimore City Traffic Director Henry A. Barnes recently started preparation of a report on parking and transportation habits as a basis for determining where city-financed parking garages are most needed.

It was announced the study would include the parking situation throughout the city and the transportation used by those entering the downtown section daily.

Most of the garages already constructed with city financing are located in the downtown area where the State Roads

Fig. 1
Modern off-street parking garage.

Commission and the City Planning Commission indicated in 1946 there was the greatest need for off-street parking. Several projects were later approved for location just outside the downtown area and some new applications are for facilities still farther from the center of the city.

Pending completion of the new studies, the Baltimore Off-Street Parking Commission halted approvals of new projects except in emergencies.

Records of the off-street parking agency indicate that about 4,900 additional off-street spaces have been provided since 1946 through city or private financing, which would indicate a present need of close to 5,000 more spaces to get the overflow off the streets and ease congestion.

MASSACHUSETTS: A state legislative proposal would allow cities and towns and authorities to issue bonds for acquisition and maintenance of off-street parking facilities.

In another development, Boston's $15,000,000 off-street parking program was temporarily slowed when the City Council continued its fight for a voice in the selection of proposed downtown sites for parking garages.

The Boston Council adopted a resolution February 28 which virtually served notice on Mayor Hynes that it would

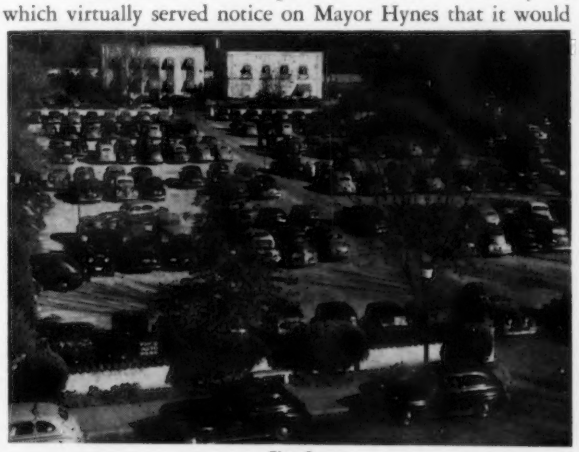

Fig. 2
Off-street parking provided by department store for their customers. Note attractive appearance achieved by trees and bushes planted around outside of wall.

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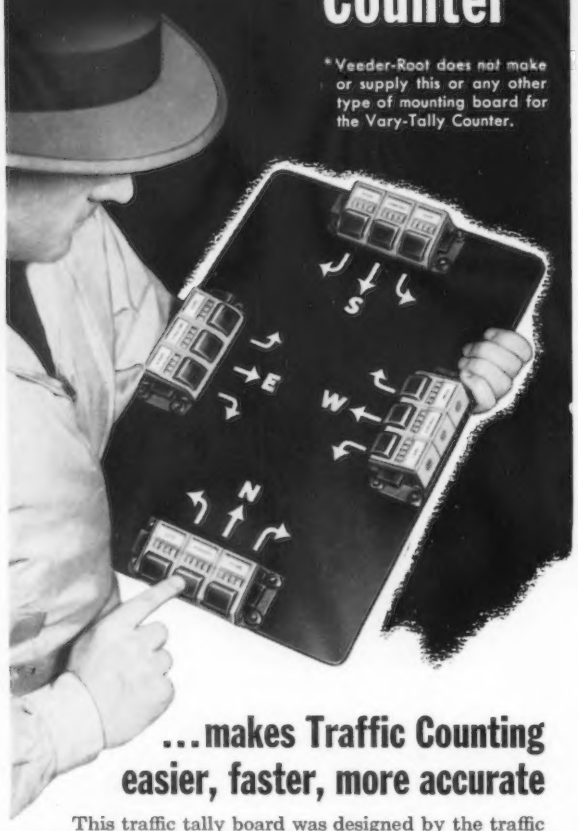

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Fig. 3
Vacant lots on which building will be constructed in the future are often used as temporary off-street parking areas.

not authorize any loan orders for the proposed 5,000-car parking program unless the sites meet with the council's approval.

Councilmen sponsoring the move took the stand that the program should be approved "piecemeal fashion" rather than giving the mayor a "blank check" by approving his request for a $5,000,000 loan order to get the program started.

MICHIGAN: Rejected in the state legislature was a proposed state constitutional amendment which would have required local referendum approval before cities could install parking meters.

MINNESOTA: Pending in the Minneapolis City Council at this writing was a proposed $862,000 Hennepin - Lake parking lots project, the first of its kind contemplated for the city.

The proposal contemplates establishment of four parking lots between 29th and 31st Streets and from Holmes to Fremont Avenues.

NEW JERSEY: A five-man parking committee of the Newark City Council recommended a three-point program designed to improve the city's parking facilities.

The committee at the same time rejected all offers from private firms to purchase one downtown piece of city property and lease another for development as parking lots and placed responsibility for such development with the city.

The parking plan recommended to the Newark local government body included:

1—Development of off-street neighborhood parking lots

(Continued on page 278)

Fig. 4
One type of municipal off-street parking facility.

Planning A New Community - Traffic Engineering Style

By Douglas J. Carmody (Jr. Mem., ITE)
Traffic Engineer, Modesto, California

BEFORE APPROACHING the specific details of what the plan would involve, I would like to discuss the environment that a traffic engineer would like to have in this new community. The following three ingredients if found in a new community, go a long way in assuring success of a traffic engineering program. They are as follows:

1. *A sympathetic and understanding citizenry.* Almost anything that a traffic engineer does affects the lives of the people in a community. Signals, one-way streets, and parking restrictions are but a few. If the citizenry realizes that these measures may inconvenience a few but are for the benefit of all, the pressures that a traffic engineer is subject to are greatly reduced.
2. *An honest, courageous legislative body able and willing to stand up to pressure.*
   The removal of diagonal parking on a congested street is but a single example of an instance requiring courageous action. An example of honesty would be found when a councilman approves a parking lot because it is necessary but which may well be contrary to his best financial interests.
3. *Capable administration.*
   No matter how enlightened and understanding the citizenry and elected officials may be, a traffic engineer cannot succeed unless other departments are headed by capable administrators.

Now let's see what the traffic engineer can contribute to this new community. The Institute of Traffic Engineers have said that "Traffic Engineering is that phase of engineering which deals with the planning and geometric design of streets, highways and abutting lands and with the traffic operation thereon as their use is related to the safe, convenient and economic transportation of persons and goods."

Stated in simple words: A traffic engineer must take the streets built by real estate developers and/or construction engineers, whose principle motive is more lots and/or low design standards to reduce costs, approved by City planners, congested by utilities, occasionally made inoperative by utility repairs, maintained in questionable condition by maintenance engineers, occasionally torn up by construction engineers whose main idea is to obtain the best job, preferably by prohibiting all traffic during construction and install 4-way stop signs at all intersections to appease corner residents, yet have an unlimited speed zone at all places *except* in front of each individual resident's home, and still accommodate the vehicle designed by the automotive engineer whose criterion of design is *not* the road on which the vehicle must operate, but what the Sales Department feels the people will buy. (At the present time, it appears that the vehicle that they have designed is capable of flying speeds, but to cater to the buyers' wish to keep his feet on the ground, it still operates on highways). The traffic engineer is given this conglomeration and told "Make it work."

Fig. 1
A quiet residential street

Now this is what makes work for traffic engineers and we are grateful to all for their contribution to the confusion. However, if the residents of this new community wish to put us out of a job, they might employ some of the following principles in laying out their new town:

I. *Land use.*

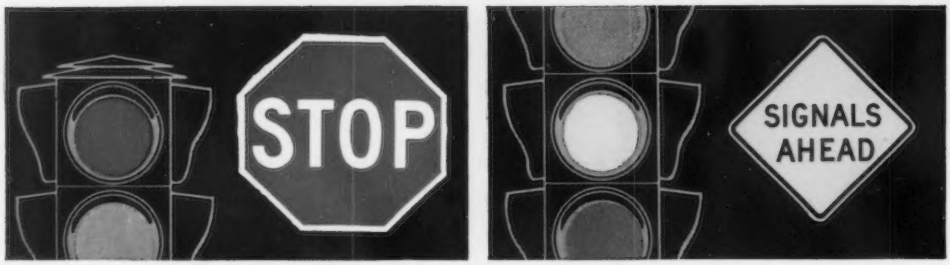
(a) *Traffic generation.*

The instant that the land use pattern is established, so are the future traffic volumes. A residential area generates about six trips per occupied home. An industrial area generates about one trip per worker plus trucks depending on the mode of transportation that the industry employs. The jackpot of traffic generation is really hit in the commercial areas. I do not have any figures to indicate the exact amount. However, modern shopping centers are allocating over 75% of their area to parking. (In this particular class of land use, it would be helpful if the commercial areas were made to encourage walking between stores and the use of mass transit.)

(b) *Compatibility of Land Use.*

The first problem of compatibility that relates to traffic is the one that creates truck traffic in residential areas. This new community should be laid out so that rail traffic is used to the degree that it can contribute to the economic transportation of goods. Then industrial and commercial areas should be laid out so that trucks can go directly from main highways to the industrial or commercial areas.

Another problem of compatibility is the one that causes major traffic movements through an area between different



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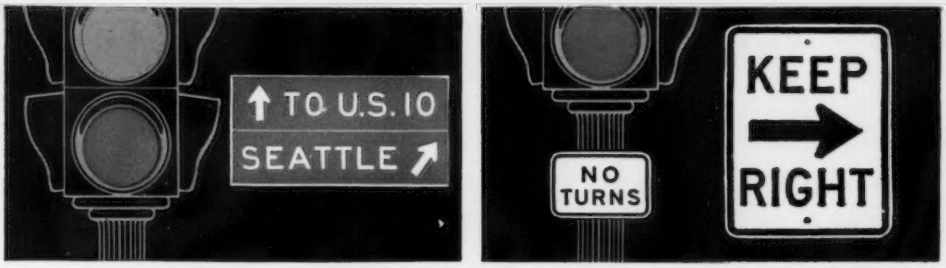

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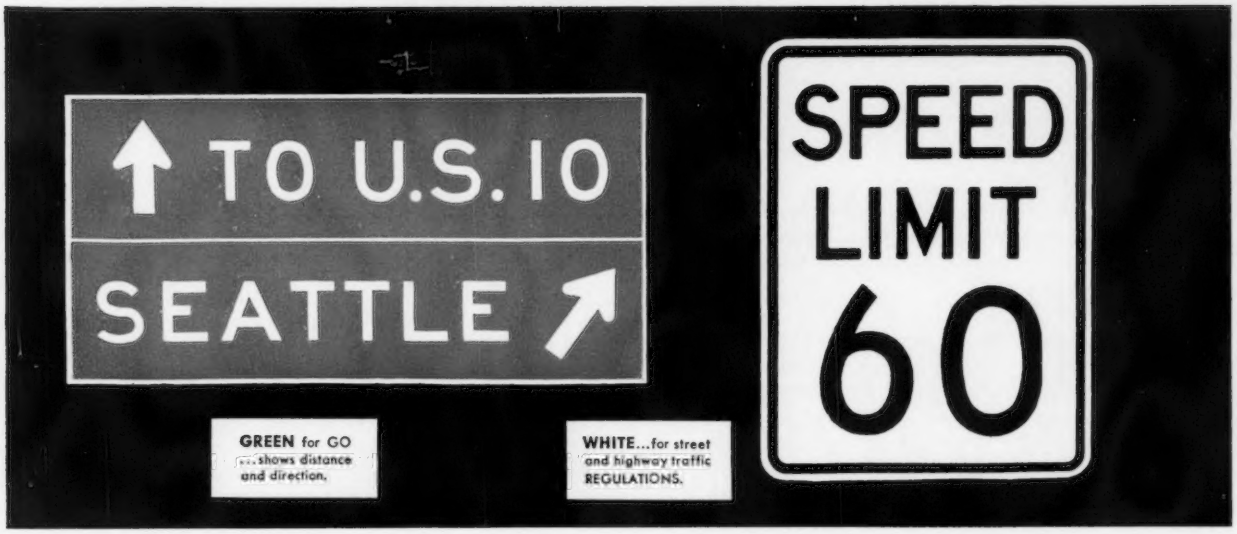

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Fig. 2
Acres and acres of parking.

Fig. 3
A "country" cottage.

uses of land. For example, a commercial area between a residential area and an industrial area. The industrial worker traveling to and from work causes an undesirable extra traffic load in the commercial area.

(c) *Schools.*

Schools are a unique traffic problem. At the present time they are often located on principal arteries. It would be far better for traffic and for the school if they were not so located. It would also be advantageous if the school district boundaries were located so that children live on the same side of major streets that the school is on.

II. *Capacity.*

The Capacity Manual published by the Bureau of Public Roads is an excellent treatise on the subject of streets and highway traffic capacities. It is not enough to make the streets wide, however. A good surface is necessary to maintain capacities. Chuck holes and ruts encourage weaving with a consequent reduction in capacity.

Signal progression is improved if major streets are located at quarter-mile intervals. Experience has shown that streets of adequate width at that spacing can handle traffic volumes presently encountered.

Control of access reduces conflicts and consequently increases capacity. The backing of lots, the limiting of driveways as to size and member and the use of "superblocks" all contribute to necessary access control which is the principal reason that freeways are so successful.

III. *Safety.*

Sidewalks should be built on both sides of residential streets to minimize the pedestrian hazard.

The use of vertical curbs is encouraged for safety and as an aid to street cleaning.

Medians to protect left turning vehicles, eliminate head-on collisions and provide a pedestrian refuge on streets having four or more lanes, are absolutely essential. A minimum width of 6 feet is recommended to shadow a lady with a baby carriage or a child with a bicycle and 18 feet is recommended for left turning vehicles, providing a 12-foot lane and a 6-foot pedestrian island.

Street lights protected by adequate laws against trees that obscure them are heartily recommended for the safety of pedestrians, both to protect them from automobiles and against felons.

One of the greatest sources of accidents in residential areas is the one at the uncontrolled residential intersection. This type of accident is usually caused by a combination of one driver taking the right of way coupled with a sight restriction. Many states have a law stating that at intersections where you cannot see 100 feet down the cross street when you are 100 feet from the cross street, the speed limit is 15 miles per hour. Most of this type of accident could be eliminated if a sight triangle of 100 feet could be reserved prohibiting all sight restrictions from within the sight triangle.

The above suggestions are made with the realization that they may not all be "practical" but also with the realization that they are necessary if this new community is to take advantage of the experience gained by traffic engineers fighting the daily battle of traffic survival in an old community.

PARKING SPACE DEVELOPMENTS AROUND THE NATION

(Continued from page 274)

as proposed by the committee earlier with recommendations to be made to Mayor Carlin for immediate establishment of 12 of these lots on an experimental basis. Sites would be chosen by the full City Council.

2—Termination of an existing lease with a private concern for use of the old Lawrence Street School property in Lawrence Street, between Market and Commerce Streets. Immediate demolition of the building and establishment of a parking lot on the site. Long-range development of the site, to be decided by the City Planning Board acting in conjunction with the mayor's new Committee on Economic Development.

3—Immediate development of the city-owned tract on the west side of Mulberry Street, between Green and Franklin Streets, into a parking lot with at least 75 spaces for metered parking and an additional 50 spaces for cars of city

(Continued on page 298)

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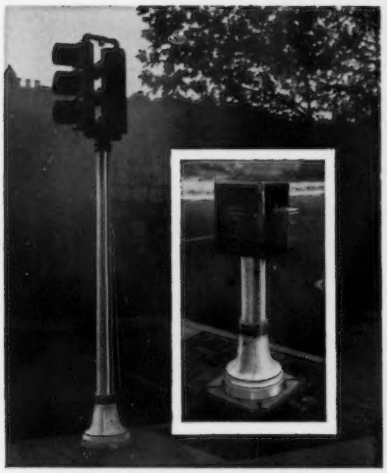

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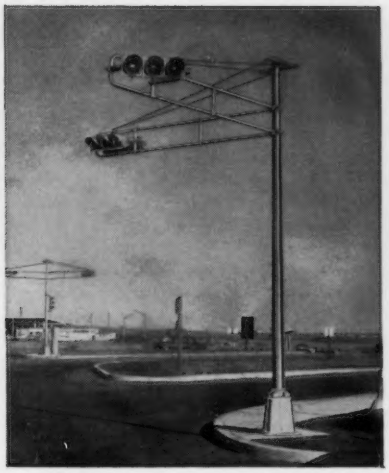

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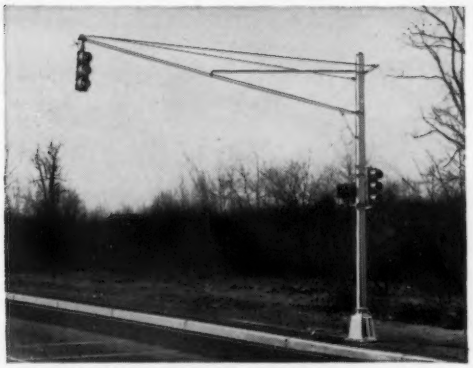

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OPEN DISCUSSION

By Nathan Gordon (Assoc. Mem., ITE)
Highway Engineer
Bureau of Public Roads
Washington, D. C.

Protection of Abutting Property Owners on Expressways Against "Runaway" Vehicles

A hazard often develops where sufficient right-of-way is not obtainable.

Unlike a "runaway" train confined to its railroad track, a "runaway" auto on an expressway makes its own tracks and thereby presents an ever increasing threat to abutting residential areas. The following is a report on one case of a "runaway" automobile situation in a residential area.

Conditions:

1. *Location:* Santa Ana Freeway between Atlantic and Washington Boulevards, Los Angeles. Length of residential area concerned is 2,000 feet.
2. *Design Data:* Six-lane divided; 12′ median, 8′ plant mix shoulders; 120′ right-of-way; chain link fence 6′ high at right-of-way limits; alignment — two right hand curves of 5,000′ and 2,700′ radius with 1,692′ tangent between. Standard superelevation.
3. *Traffic:* 16-hour count on eastbound lane in July 1954: Sunday—26,974 vehicles, Monday—34,096 vehicles.
4. *Problem:* On the south side of the freeway, four recorded accidents have occurred between July 1953 and May 1954 involving "runaway" cars that have plunged into the link fence endangering abutting property and life. Cause of "runaways" was attributed to drinking and falling asleep. Abutters complained vehemently and petitioned authorities and the Governor for help.
5. *Solution:* State installed 2,800′ of metal plate guard rail for full length of residential area 10′ horizontal distance from fence (at edge of shoulder). Cost was $11,000. Guardrail has apparently been effective in keeping "runaway" vehicles within roadway; no further protective measures were considered necessary. A wall was requested by the abutters; but a 3′ high concrete retaining wall would have cost about $50,000 and would have probably not satisfied residents who requested a high wall.

Discussion:

This case presents us with the recipe for a dangerous highway dish. The ingredients are: a narrow right-of-way; flat grade and terrain; long somewhat straight sweep of highway; high speeds; and finally, and very important—an abutting residential area. Why the accidents have occurred on this particular stretch is not given by the records. But there appears to be no doubt as to the danger and the necessity of safeguards.

What are these safeguards? Adequate right-of-way in residential areas is a must. A planted area at the edge of right-of-way consisting of trees and shrubs could help relieve the nuisance of noise and dirt and to some degree protect against the danger of "runaway" cars. A suitable guardrail, of course, would complete the necessary treatment. All these provisions would also tend to counteract the depreciation of property values in special cases such as this one, and would further discourage claims of abutters for anticipated detrimental effects.

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TRAFFIC NEWS

Improved Headlights Available Soon

Improved sealed beam headlamps, designed for easier and safer night driving will be available on 1955 cars and trucks as soon as legislative technicalities permit. Development and testing of the new lamps has been completed and the improvements include:

Better light distribution, especially on the lower beam which gives 80 feet more seeing distance along the right side of the roadway. This is achieved by new lens design and a new shield positioned over the lower beam filament. This filament cap blocks stray upward rays without interfering with the main forward beam. More light throughout upper and lower beam patterns is achieved by a 5 watt power increase on both beams, thus making a total of 40 watts on the lower and 50 on the upper. This increase does not exceed the present legal limit for beam candlepower.

These new lamps are the result of four years of cooperative endeavor by motor vehicle and lamp manufacturers working closely with U. S. and Canadian public officials. The program was initiated in September, 1950, by the Automotive Manufacturer's Association Engineering Advisory Committee at the request of the American Association of Motor Vehicle Administrators' Engineering Committee. The actual engineering was performed by a special subcommittee formed from five headlamp manufacturers. This group developed and tested 11 experimental designs before one was given approval by AAMVA in October, 1953.

The need for the new headlamps was caused by the very significant increase in night driving. City drivers used the low beam exclusively and rural travelers were forced to use the low beam very frequently. This resulted in the headlamp development being carried out with the idea of stretching out lower beam seeing distances especially along the right curb or shoulder where pedestrians or obstructions are most likely to appear.

This lighting improvement is the seventh major one in automotive headlighting since oil lamps were replaced by acetylene gas lamps in 1906. These lamps produced 5,000 beam candlepower but were messy, undependable and potentially dangerous. They were succeeded by electric lamps of 30,000 candlepower in 1912. Vacuum filled bulbs of 45,000 candlepower made their appearance in 1915, followed by two-filament bulbs, fixed focus, and prefocused units. The original sealed beam units came out in 1939 featuring hermetical sealing against dust and moisture.

It is thought the new lamps will appear on the assembly line about the middle of the model year. Legislative action must still be completed by a dozen jurisdictions to enable this to occur.

Northwestern University Establishes Transportation Center

The establishment of a national Transportation Center at Northwestern University was announced in December by President J. Roscoe Miller.

The new Center will carry on a program of research, undergraduate training, and graduate study aimed at the solution of major problems in the highway, rail, air, pipeline and water divisions of the nation's transportation industry.

The Center is a joint undertaking of the University's School of Commerce, Technological Institute, and Traffic Institute. Several other divisions of the University will also participate.

An advisory committee of business and professional men interested in transportation will be formed to aid the University in the formulation and direction of the Center's activities.

"Transportation is such a vital factor in modern living," said President Miller, "that it seems desirable to expand the work of Northwestern University in this field. Because of its rapid development, transportation has become increasingly complex and has created many unsolved problems — economic, technical, and social."

"Northwestern University is admirably situated for transportation research and education. We have already done a great deal of work in this field, and we believe that, with adequate support, we can make a substantially greater and more effective contribution through our new Transportation Center."

The following have been appointed to the University Committee charged with the initial direction and planning of the Transportation Center: Stanley Berge, professor of transportation, and Leon A. Bosch, director of the Graduate Division, School of Commerce; Burgess H. Jennings, chairman of mechanical engineering, and Carl W. Muhlenbruch, professor of civil engineering, Technological Institute; George W. Barton, traffic engineering consultant for the Traffic Institute, and Franklin M. Kreml, director, Traffic Institute. Mr. Kreml is serving as chairman of the committee.— *Traffic Digest & Review.*

Purdue Sets Third Traffic Control Conference

The Third Annual Purdue Traffic Control Conference will be held at Purdue University, Lafayette, Indiana, on Thursday and Friday, May 19 and 20, 1955. The conference will spotlight "The Parking Problem" and is sponsored by the University in cooperation with the Indiana Section of the Institute of Traffic Engineers.

Included among the speakers are Burton W. Marsh, Director, Traffic Engineering and Safety Department, American Automobile Association, and D. Grant Mickle, Director, Traffic Engineering Division, Automotive Safety Foundation from Washington, D. C., and W. R. Marston, Deputy City Traffic Engineer of the City of Chicago.

The conference will provide an opportunity for traffic engineers, police officers, city and state officials, businessmen and other interested parties to discuss the many aspects of the parking problem and their relationship to the various ways of alleviating traffic congestion. Speakers representing all these interested groups are included in the program.

John E. Baerwald, Research Engineer of the Purdue Joint Highway Research Project is the conference director.

New Appointments . . .

De Noble Directs Traffic And Planning in Springfield, Missouri

Henry M. DeNoble (Jr. Mem., ITE), former Director of Planning and Traffic in Lubbock, Texas, was named Director of Planning and Traffic for Springfield, Missouri, effective February 16, 1955. He will be directly responsible to the City Manager for all planning and traffic activities in the city.

Henry M. De Noble

A native of DePere, Wisconsin, Mr. DeNoble spent most of 1945 and 1946 with the U. S. Navy in the South Pacific and China. Returning to Wisconsin in 1947, he attended Wisconsin Institute of Technology until joining the Planning Department at Green Bay in August, 1948.

In November 1950, he went to Lubbock, Texas, a Junior Planning Engineer. A year later he was promoted to Senior Planning Engineer, and the following summer the title Traffic Engineer was added. In July, 1954, DeNoble was named Director of Planning and Traffic. During this period, Lubbock rose from 32nd place to 2nd place in its class, in the traffic engineering section of the Inventory of Traffic Safty Activities. For the past six months DeNoble has been consultant for the City of Carlsbad, New Mexico.

Mr. DeNoble is married and has three children. His professional affiliations include the ITE, ASPO, ASPA and IMSA, and he is an ardent sports enthusiast.

Kelly Heads New Cleveland Division

Robert J. Kelly (Jr. Mem., ITE), former Superintendent of the Bureau of Parking in Chicago, has been named Commissioner of Traffic Engineering and Parking for Cleveland, Ohio. Shortly before Mr. Kelly's appointment, the new Division of Traffic Engineering and Parking—formerly a branch of the Police Department—was created by ordinance, placing it on the same level as the Police and Fire Divisions of the Department of Public Safety.

Robert J. Kelly

Born in Chicago on December 25, 1920, Kelly spent a year at Holy Cross in Worcester, Mass., and a year at Loyola in Chicago. Interrupting his college career, he spent three years with United Air Lines. In 1942, he entered Notre Dame as part of the V-12 program and two years later was in the South Pacific aboard the heavy cruiser USS Canberra. In 1946 he was separated from the Navy, re-entered Notre Dame, and received his degree a year later.

After a couple of years of running his own construction company, building houses and garages, Kelly joined the Bureau of Street Traffic in Chicago as a Traffic Engineer. Four years later he was appointed to head up the new new Bureau of Parking in Chicago, taking over jurisdiction of approximately 27,000 parking meters and the administration of a $22,600,000 bond issue for the extension of off-street parking.

Mr. Kelly and his wife, Ann, are currently engaged in searching for a house large enough to hold them and their five children—Danny, Peggy, Susan, Steven, and Thomas.

Robinson with ASF

Carlton C. Robinson (Assoc. Mem., ITE), formerly assistant traffic engineer of Portland, Oregon, recently became associated with the Automotive Safety Foundation. His new duties primarily involve research activities for that organization. His first assignment is as Secretary to Sub-committee IV, "Level of Existing Auto and Truck Services" of the newly-formed National Committee on Urban Transportation.

Carlton C. Robinson

Following his graduation from the Long Beach, California Polytechnic High School in 1943, Mr. Robinson served in the Army for a period of three years. His Army duties included studies at the University of Utah and Oregon State College. He graduated in Civil Engineering in 1948 and accepted employment in the City of Portland as a Junior Traffic Engineer. His duties there involved supervision of the traffic signing and marking program.

During the academic year of 1950-1951, he attended the Bureau of Highway Traffic at Yale University. He was awarded the ITE Past Presidents' Award in 1951 for the paper "Pedestrian Interval Acceptance" based on his thesis project. Following his return to Portland, he was promoted to Assistant Traffic Engineer under Fred Fowler and served in this capacity from 1951 to the time of his recent move to the Automotive Safety Foundation. The last project

(Continued on page 283)

with which Mr. Robinson was associated in Portland was a Central Business District Parking Study aimed at reappraising the 1946 Parking Survey and determining current deficiencies.

Mr. Robinson is a registered Civil Engineer in the State of Oregon. His professional activities included the post of Secretary-Treasurer of the Western Section of the *Institute of Traffic Engineers*. He is also a member of the American Society of Civil Engineers. Mr. Robinson is married and has two children. His principal extra-curricular activity is amateur photography.

Eastern Safety Administrators Hold Institute

The first Eastern States meeting on traffic for the Institute for Safety Organization Administrators was held recently at Yale University. The Institute, sponsored by the National Safety Council, brought the traffic problem to the local safety council level. Certificates were awarded to fifteen full-time participants representing Eastern States safety councils, insurance groups, and the AAA, who completed the course given January 24th to 28th.

Sidney J. Williams, Assistant to the President, National Safety Council, keynoted the five-day short course by stressing the safety council's oneness of purpose with that of the traffic engineer. Only in a few minor regulatory situations were differences to be found according to Mr. Williams.

Later sessions featured the Engineering approach through knowledge of traffic, geometric design, regulation, and administrative measures as presented by the Yale Bureau of Highway Traffic staff. The Enforcement approach as presented by Gerald O'Connell, Director of Training, Northwestern University Traffic Institute, stressed the need for basic enforcement requirements, traffic direction, and accident investigation. Louis Morony, Director, Laws Division, Automotive Safety Foundation, and Judge Joe Hill, American Bar Association, acquainted the group with traffic laws and ordinances and traffic court organization and operation, respectively.

Sessions were also presented on Driver License Laws, School Safety Education, Fleet Safety and Finance and public education by National Safety Council representatives, Wayne Hughes, Paul Coburn, Joseph Lovvorn, and Edwin Smith as well as by Basil Creighton of the American Association of Motor Vehicle Administrators.

The Institute grew out of the successful Traffic session held at Northwestern University this past summer. A future Institute will probably be held in the West soon. The group attending a closing luncheon on Friday, January 28th, heard Doctor Herbert Stack, Director, Center for Safety Education, New York University, stress the need for implementing driver education programs as the key to highway safety.

Receiving certificates were:

Harry H. Brainerd
Western Pennsylvania Safety Council
Pittsburgh, Pennsylvania

Bert R. Harmon
Massachusetts Safety Council
Boston, Massachusetts

William H. Keeler
Rochester Safety Council
Rochester, New York

R. T. Laidlaw
New Brunswick Safety League
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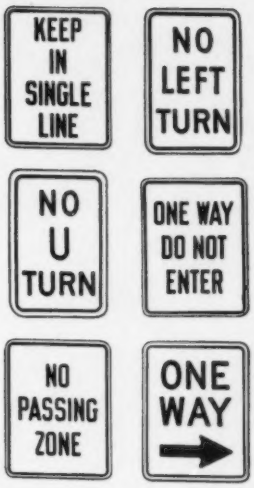

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N. Y. State Federation of Community Safety Organizations
Poughkeepsie, New York

Joseph E. Schmidt
Allstate Insurance Company
White Plains, New York

Harold A. Seward
Secretary-Treasurer
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Automobile Club of Springfield
Springfield, Massachusetts

James K. Williams
Safety Council of Western Mass.
Springfield, Massachusetts

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Mr. George C. Shannon
City Manager, Box 400
Anchorage, Alaska

CITY OF CORPUS CHRISTI
TRAFFIC ENGINEER

To organize new traffic engineering division. Graduate experienced traffic enegineer required. Salary range $6132 to $7068 per year depending on experience.
Write:
Russell E. McClure, City Manager
P. O. Box 1622
Corpus Christi, Texas

CITY OF WHITE PLAINS
TRAFFIC ENGINEER PLANNER

To advise Common Council, Department of Public Works, Department of Public Safety, and Planning Board about traffic matters including control devices, regulations, arterial routes, street widening, off-street parking facilities, etc.
Salary about $7000 per year.
Write:
James S. Heap, Jr.
City Personnel Director
White Plains, New York

NATIONAL COMMITTEE ON URBAN TRANSPORTATION
STAFF DIRECTOR

The National Committee on Urban Transportation is seeking a Staff Director to serve as coordinator on a long-term research project to develop standards and procedures for solving local transportation problems. The over-all purposes of the National

(Continued on page 288)

PRESCRIPTION Rx FOR BETTER TRAFFIC CONTROL

Traffic Control, parking, and parking enforcement can become an efficient and economical operation in your city —when you install the dependable KARPARK TWIN-O-MATIC or UNIMATIC parking meters. They're superbly built by the famous HERSCHEDE HALL CLOCK COMPANY, makers of America's finest clocks.

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simple to operate, highly visible for easy enforcement, ruggedly built for accurate timing in any kind of weather.

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KARPARK TWIN-O-MATIC
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For single car parking. Can be used for an entire system of single car parking, or, when used with Twin-O-Matic, can be placed at street ends and special single locations.

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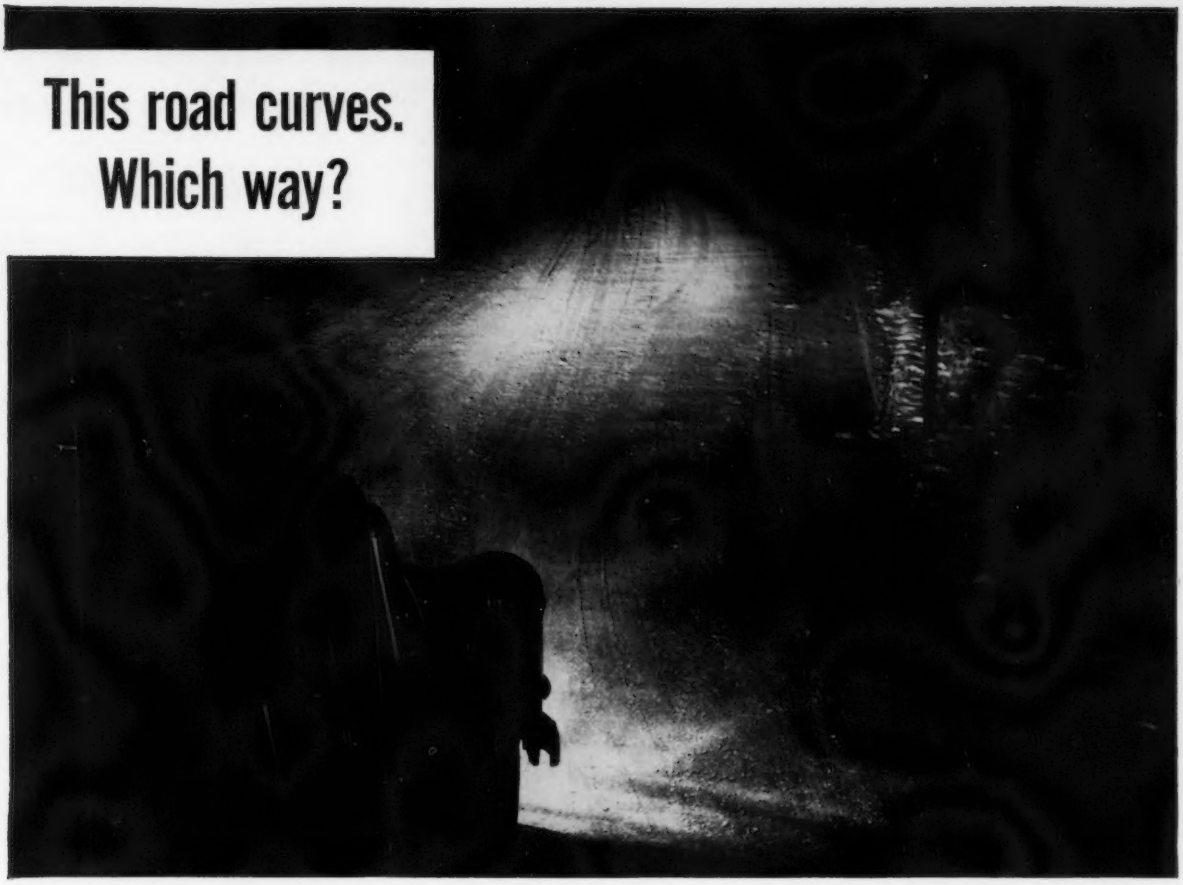
In Canada TWIN METER CO. OF CANADA, LTD.
5002 Park Avenue, Montreal 8, Quebec

This road curves. Which way?



Stimsonite delineators (200 feet apart, closer on curves) clearly define a dangerous stretch of highway.

Left—but it's hard to tell from the driver's seat. With Stimsonite delineators (small photo) road alignment and grade are clearly indicated . . . the "horizon" that guides the driver by day artificially restored by night.

Leading traffic authorities have indicated that delineation reduces night driving hazards as much as 25%!

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And . . . Stimsonite reflectors are all one material. Reflecting surfaces are molded inside—and sealed. There is nothing to chip, fade or wear off. Exposed surfaces are smooth and curved to shed road film in the rain. **WRITE FOR DETAILS.**

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AGA DIVISION

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Miscellanea

Congratulations to **Chuck (Charles A.) Clinard**, former Assistant City Engineer, Champaign, Illinois, who took over March 1st as Traffic Engineer for the City of Abilene, Texas. Also, to **Ted (Theodore M.) Vanderstempel**, who took over as Traffic Engineer of the City of Pontiac, Michigan on January 1st. **Ted** was formerly one of **Sorenson's** and **Marston's** boys in the Bureau of Street Traffic in Chicago. We would like to run something on these appointments on our "New Appointments" page but both of these chaps are so modest that they won't give us any background material. **Walt Macnee** of Toronto is a disgustingly proud papa of a he-kid born last December. Institute President **Harry Porter**, District 4 Director **Matt Sielski** and Midwest Section President **Evan Olmstead** were honorary pallbearers for **Howard Ilgner**, who was buried in Milwaukee February 12th.

February issue MIDWEST ENGINEER reports **Bill (W. R.) Marston** (Mem., ITE), Deputy Traffic Engineer for the City of Chicago, was elected by the Illinois Engineering Council, President for 1955. The Council is composed of Directors from sixteen engineering societies throughout Illinois which represents over 12,000 engineers. **Bill** is also Treasurer of the Western Society of Engineers, which is the engineering club of Chicago, with a membership of several thousand engineers in all branches of the profession residing in Chicago and environs.

Joe Ong (Mem., ITE), Consulting Engineer in Cincinnati, was good enough to send us a clipping from the Cincinnati Times Star, which appeared one day early in January. The clipping is of the daily Joseph Garretson's TOWN CRIER, local column and as it is an unusual orchid to another old friend of ours, **George Howie** (Mem., ITE), it is reproduced in full.

CREDIT WHERE CREDIT IS DUE

A telephone caller from Greenhills notes the big headlines accorded the fact that 1954 equaled the best record Cincinnati ever had for traffic fatalities and comments further that everybody seems to be trying to get into the act for this good statistical record. He says that the newspapers (and particularly the *Enquirer*) "almost broke their arms patting themselves on the back;" that Raymond Clift, former police captain and now head of the Safety Council, was permitted to take a bow; that the police, generally, were given their share of credit, and that even the poor saps who drive cars were rewarded with a nod of recognition.

But, this man on the telephone said, the one, single person more responsible for the fact that traffic conditions are better (and fatality records) wasn't even given a mention. He was talking about Utility Director George Howie, who used to be the city's traffic engineer until he stepped up into this new job.

The telephone caller from Greenhills is absolutely right. Howie has done more to make Cincinnati streets safer for driving and pedestrians, to cut down accidents and to move traffic more expeditiously than any other one person.

With its narrow streets, its twisting turns and its hills this city presents tougher traffic problems than most and George Howie has dealt with these problems in a highly efficient manner. He has one of the meanest public jobs that comes to mind and he has taken all the screaming and hollering in stride.

Remember when everybody was laughing (or getting mad) about "Howie's Hurdles"? How many complaints have you heard recently? And isn't downtown traffic flowing more smoothly than it ever did?

I was glad to get this call from Greenhills because it served as a reminder. Howie is OK in my book too.

Chicago has awarded a contract to a private firm for a six times a month collection of the coins from parking meters. The month's cost per meter is 10c. The Cincinnati Transit Company has inaugurated a new trial club plan service to give business people residing in the same locality fast non-stop ride with a guaranteed seat to and from downtown. Requires prepayment of $10.00 per month, plus 10c per ride. Transit industry is watching plan with great interest.

The Washington Legislative Bulletin estimates that at the end of 1954 all levels of government of the United States have spent 39 billion dollars for highway and street purposes during the last 10 years. In spite of trolley use being on the decline it is reported that in 1953 streetcars carried one billion, four hundred and twenty-four million revenue passengers. The U. S. has a motor vehicle for every 3 persons, a truck for every 16. In China there are nearly 9,000 persons per vehicle. In Russia the ratio is about 740 to one. In France, 16 to one, United Kingdom 14 to 1, Argentina 48 to 1. One-fifth of all the patents issued by the U. S. Patent Office last year were automotive.

Mr. Willard Bascom, Technical Director of the Academy of Sciences, National Research Council's Advisory Committee on Civil Defense, attended the meeting of the Highway Research Board's Department of Traffic and Operations in Washington on January 14th, and gave a most interesting off-the-cuff talk on the status of present Civil Defense thinking and its relation to the traffic engineers. At the request of Department Chairman **Wilbur Smith**, Mr. Bascom has prepared a brief resumé of his talk which is reproduced in full.

CIVIL DEFENCE AND THE TRAFFIC ENGINEER

The U. S. civilian is now threatened by the fact that the Soviet Union has the capability of attacking the country with thermonuclear weapons. No absolutely military defense is possible. A real civilian defense, however, can insure the survival of millions of Americans who otherwise will die.

Any defensive action requires some warning. At present 15 to 60 minutes warning is available and the policy is to take the best shelter that can be reached within that time. In a few years the warning time will increase to several hours and then the policy will be to evacuate the most dangerous central areas of larger cities at which a bombardier can be expected to aim.

Evacuation means that the people who are close to an obvious target area will have to leave—fast—and by any transportation that is available. Each city will have to plan for itself a method which utilizes its most effective transportation. For evacuation is essentially a traffic *planning* problem and as such requires the talents of our best traffic engineers.

You can help in three ways:

(1) Volunteer your services (as an evacuation planner) to your city's civil defense organization. It needs you.

(2) In civil projects such as roads, bridges, overpasses, freeways, etc., on which you may be consulted, please point out the necessity for giving priority to those projects which will help with evacuation.

(3) Have a plan for yourself, your family, and your office, shop, or laboratory. Every little bit helps.

Teke Wiley, New York City's Traffic Commissioner, was interviewed on WCBS radio program "Let's Find Out" at 1:30 P.M., January 23rd. This program is featured every Sunday in which an official familiar with a subject of particular interest is interviewed by two newspapermen without benefit of prior rehearsal. The question of the program was "What's Ahead for New York Traffic." **Teke** did a truly beautiful job. The principal theme was the effect on safety and improvement in movement which had been brought about by making one-way streets out of two of the avenues. One question concerned why more avenues were not declared one way. **Teke** spoke of plans to bring this about which were being held up by the difficulties of working out surface transit line reroutings as well as other problems which must be solved. Incidentally, the businessmen who fought establishment of the one-way system on the two avenues were recently polled and 80% reported that their business had been helped by the new regulation.

LOVE COMES TO HENRY GLAUSSON, ITE

By Bryan Wilson (Mem., ITE)
Traffic Engineer, Wisconsin Division, AAA, Madison, Wisconsin

It was approaching 5:00 P.M. when the twitter of birds aroused Henry Glausson, Traffic Engineer of Mule's Head, Population 73,000, from his sombre contemplation of the lone picture hanging chastely above his drawing board. It was really a very fine picture of a group of eminent traffic engineers rounded up hurriedly at an annual ITE meeting. There was tall, Lincolnesque Wilbur Smith; round, cheerful Bob Holmes; handsome Charlie Murphy; aggressive Burton Marsh, active even in repose; Harry Porter, confident and infinitely placid; harassed Tim Todd, quiet for the moment only; Walt Klapproth, the Texas longhorn, bull-dogged into the group by work-horse George Fisher of Wichita, Kansas; slow-talking, but fast-thinking Leon Corder of Missouri, and a host of others.

But Henry was not actually seeing the picture. Instead, he was desperately trying to assemble data in his mind for a searching analysis in an attempt to explain the strange, disorganized state into which he appeared recently to have fallen. He walked morosely over to the window opening on the alley and let his eyes roll over its drabness. He observed with distaste a famished cat lustfully staring at a decaying fish head on top of a high garbage can. His eyes wandered to a lonely, misshapen bush whose top branches had crawled over a stonewall into the alley in timid exploration. With suddenly aroused interest, Henry noted that its buds were swollen and about to burst into leaflets. Two aimless sparrows landed on a swaying twig, indulged in a brief amatory technique, and summarily departed in separate directions. Henry was charmed. "Why, it's Spring," thought Henry, and indeed it was. The sap was rising in all the myriad plants — perhaps even in Henry!

Henry turned purposefully, and his eyes sought out Miss Willis, his secretary. She was putting on her coat preparatory to leaving, and in her struggle Henry perceived that she was skillfully constructed. Considered as a short column, she was superbly designed to withstand stresses of torque and compression; thought of as a vertical cantilever, attached to a semi-fixed base at the lower end, she looked particularly well balanced to withstand maximum uniform loading, or even a heavy, concentrated load in the center of the beam, so to speak; her neutral axis would be a series of curves of varying degrees, and forces set up on either side to resist compressive and tension stresses appeared to be evenly balanced. Henry felt that he could put her on the drawing board by means of intricate French curves provided he could take a few basic measurements, which, of course, was out of the question.

"Miss Willis, may I have a few minutes of your time?" asked Henry in what he intended to be a manly bass. To his surprise he sounded high soprano.

"Certainly, Mr. Glausson," she replied, and smilingly wafted over to him with what appeared to Henry as true harmonic motion. Her eyes, dark blue and singing with mystery and adoration, probed gently into Henry's. She had timidly adored Henry from his first day in the office, but had reluctantly decided that in a match with his slide rule she was hopelessly outclassed.

"Miss Willis, I need help," began Henry, hesitantly, "I have always been self sufficient and fairly happy. I've lived cozily with my formulae, my slide rule, the Manual on Uniform Traffic Control Devices, and the AAA Parking Manual. For mental exercise, I resort to the Calculus, Schoepenhauer, and the editorials of Stuart B. Wright in the Wisconsin Motor News. But, strangely enough, these tried friends now fail to satisfy me completely, as they have in the past. What is the matter with me, Miss Willis? I seem happy only when looking at you!"

Miss Willis sighed ecstatically, then assumed a professional air. "It does sound puzzling when the interesting things you mention no longer suffice," she said thoughtfully. "Are there other symptoms?"

"Yes, indeed," said Henry, unburdening himself. "There were two rather phenomenal incidents that occurred only this week. Miss Willis, you won't believe this, but only yesterday morning I was working out a problem on the slide rule. It was fairly simple, involving only the use of logarithms of the natural trigonometric functions, and I arrived at the answer mechanically without thought, but—," Henry paused and an agonized expression tinged with the red of deep humiliation spread from his neck until it eventually diffused his elongated forehead, "but, I found, to my chagrin, that I had lost the decimal!! Therefore, the answer was worthless. Believe me, Miss Willis, such a thing hasn't happened since I was a sophomore!"

Miss Willis could see the fine beads of sweat that filmed Henry's face, and her heart almost tore itself from her bosom. Such sincerity! Such sensitivity! What a pleasure some lucky woman would derive from diverting Henry's interests to herself, thought Miss Willis, also coloring. "And the other incident, Mr. Glausson?" she queried.

"It was the 9th of this month, three days prior to the incident I just related. I remember glancing at my watch. It recorded the time as 3:15, plus, in the afternoon. I was working at the drawing board and absently lighted a cigarette and put it into my mouth. A not unnatural thing, you'd say, but the amazing fact was that there was already a cigarette there! Not only that, but I glanced at the ash tray and two comparatively fresh cigarettes were burning there! Apparently I had lighted them all within a space of less than a minute!"

"There must be a natural reason for these things, Mr. Glausson. I have picked up some of your scientific methods of analysis, and I suggest that you try to connect these two incidents with something common to both of them. Can you recall what had happened, or what you were doing, immediately prior to each of them?" and Miss Willis dimpled and hung breathlessly on his answer.

Henry thought deeply for a moment. Suddenly, his face brightened and he exclaimed: "I have found it! I know the common denominator of the events! Just prior to what we shall call 'The Case of the Surplus Cigarettes,' I had noted a sunbeam that came through the Venetian blinds and centered on a small curl at the back of your neck. For some reason, this simple observation considerably agitated me. And, just prior to what one might call 'The Case of the Missing Decimal,' I allowed my mind to dwell briefly on a dimple you exposed when you looked up and smiled at me! One might say I lost the decimal in your dimple! Such was your effect on

me! You are the basic cause!" And Henry let his eyes play freely and gluttonously over the blushing features of Miss Willis, who, quite plainly was struggling between tears, laughter, and maidenly confusion.

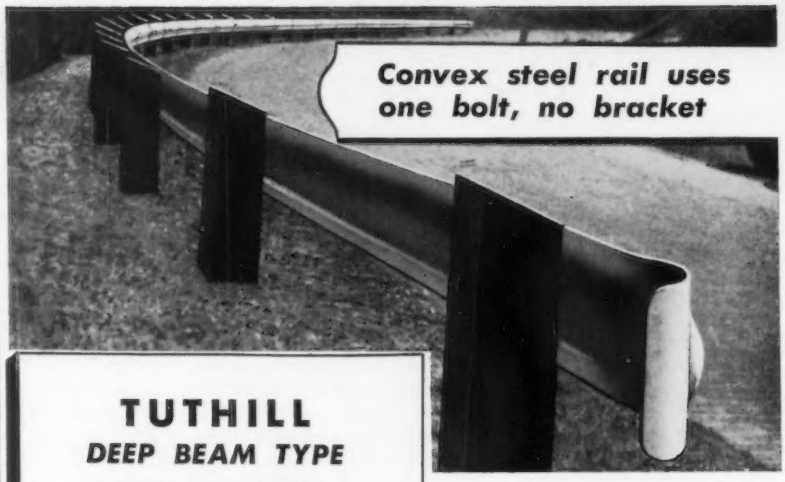
"Oh, Henry! In spite of your mathematics and philosophical approach, I had the answer first. A woman can sometimes solve a natural problem intuitively, and I'm—Oh, so happy, Henry!" exclaimed Miss Willis in a rush of words. "Have you ever kissed a girl, Henry?"

"No, Miss Willis, I never quite got around to it, though the thought is not unpleasant. In fact, it's terrific to the n-th power!" answered Henry, having some difficulty breathing, although anyone could see that there was plenty of air all around him.

"Henry, please call me Alice," breathed Miss Willis. "I feel so happy and humble before you, lover! I don't know a logarithm from a cube root, but I'm going to give you something to try out on your slide rule. Let me know the answer in the morning. This is it!" and Miss Willis reached soft arms around Henry's neck, found his lips and implanted thereon a long, tender kiss with all the voltage of General Electric behind it. She then ran out the door of the office and downstairs.

At the first touch of her lips, Henry had felt the bones in his knees melt rapidly away; as the kiss continued, Henry's toes curled spasmodically, and seemed determined to change places with his heels: Henry was conscious of a sensation such as the most abstruse problem in Calculus could never produce in a million years, cubed. Though knowing that he would never feel the same again, he yet was deliriously happy about the whole thing! He staggered weakly to a chair and tried to recover by focusing his astounded eyes on the picture group of eminent Traffic Engineers hanging chastely above his drawing board. It seemed they were all engaged in a vigorous square dance, and laughing hilariously. Even Burton Marsh had a grin on his face!

Henry was only dimly aware of a cynical chuckle from the Planning Engineer, who appeared to have his head in the door. He was only faintly conscious of the words rolling out of the Planning Engineer's vacuous face—"Oh, Henry! If only the City Fathers could see that square foot of lipstick spread across the lower third of that homely pan of yours!"



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POSITIONS AVAILABLE

(Continued from page 284)

Committee are to determine the types of urban transportation data that are needed by cities, to prepare tentative manuals in various fields, and to conduct pilot studies in selected cities to evaluate the techniques for collecting information. After reviewing and refining the standards and procedures developed in the tentative manuals, the Committee will issue a final manual to serve as a guide for cities in developing broad transportation plans.

Six national organizations are represented on the Committee, including the International City Managers' Association, the National Institute of Municipal Law Officers, the American Society of Planning Officials, the Municipal Finance Officers Association, the American Public Works Association, and the American Municipal Association. To facilitate the work of the Committee nine subcommittees are now being established traffic, off-street parking, land use plan- in such fields as public transit, truck ning, classification of streets, financing, and other fields. The subcommittees are composed of specialists who will develop procedure manuals for gathering statistics and other information in their fields in selected pilot cities.

The Staff Director will serve as coordinator for the work of the National Committee, the various subcommittees in specialized fields, and the cities selected for pilot studies.

Desirable Qualifications: The staff director should have considerable knowledge of public planning and public administration, together with some knowledge of urban transportation problems and traffic engineering. He should have the ability to analyze and interpret a variety of statistical and social and economic data. He should have the ability to do editorial work and to write effectively. He should have the ability to plan and organize the work of committees, organizations, city officials, and others in all sections of the United States and to establish and maintain research and project schedules. He should have a good sense of public relations and ability to plan, organize and direct conferences; he should be able to establish and maintain effective working relationships with governmental officials and to present ideas, facts, and explanations effective in oral and written form.

Training and Experience: College graduate supplemented by graduate work in public administration, planning, or related fields. He should have four or more years of experience in some field of public planning or public administration, including some supervisory experience.

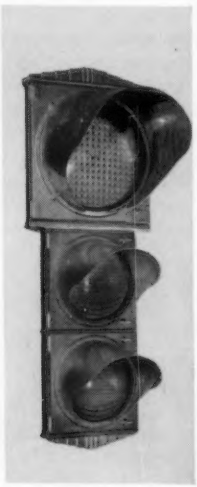
Salary Range: $8,000 to $10,000 per year depending upon the qualifications of the person selected.

Applications setting forth qualifications should be sent to Orin F. Nolting, Secretary, National Committee on Urban Transportation, 1313 East 60 Street, Chicago 37, Illinois.

Strictly Business

Crouse-Hinds Introduces New Oversize Traffic Signal

This new, large size traffic signal, just introduced by Crouse-Hinds Company, Syracuse, New York, will cause motorists to slow down sooner when approaching the intersections of rural highways. Drivers sometimes unintentionally run through red lights at rural intersections because the standard signals now in use were designed primarily for urban areas where traffic is comparatively slow moving. Auto travel in the country is much faster, averaging about 50 miles per hour, and rural highways are becoming more heavily traveled. As a result, to reduce accidents, motorists must see warning signals well in advance of intersections.



The new signal, one-third larger and almost four times brighter than present urban signals, can be seen more than a mile away under normal visibility conditions, according to K. W. MacKall, Crouse-Hinds vice-president.

Any intersection presently signalized can be modified to use the new "jumbo" signal by removing the standard red light section, equipped with an 8-inch lens and 67-watt lamp, and replacing it with the larger signal section, which has a 12-inch lens and accommodates lamps of wattages up to 250 watts.

Such a changeover recently was made for experimental purposes in Michigan. The red lights of a standard four directional, three-color signal were replaced by four oversize red lights, each equipped with 250-watt lamps. The signal was suspended over the intersection of two heavily-traveled highways.

The reactions of 125 drivers were recorded during two different intervals—before and after the oversize signals were installed. While the standard size red lights were in use, three drivers ran the lights and 16 panic stops occurred. After the large red lights were installed, and a period of two months was allowed to acquaint motorists with their location, a second check of 125 autos was made.

Results of the changeover were significant. None of the motorists ran the signal and only two drivers braked their cars abruptly. Most obvious difference was the comfortable and safe rate at which drivers, having seen the oversize signal sooner than the standard size signal, slowed down.

Construction of the cast aluminum signals is unitized so that either three 12″ sections (type H) or one 12″ and two 8″ sections (type K) may be stacked together. Type H signal weighs 43 pounds; type K, 32 pounds. Other features include a dust-tight optical system, lenses that meet ITE specifications, and mountings similar to those of the Crouse-Hinds 8-inch type T signal. WALK, WAIT, arrow lenses, or neon arrows can be interchanged with conventional lenses.

To reduce accidents at intersections of the Queen Elizabeth Way, which extends from Niagara Falls to Toronto, Crouse-Hinds' Canadian affiliate originally designed the large signals several years ago for the Ontario Department of Highways. Similar oversize signals also control heavy traffic in one section of Toronto.

Several cities in this country are currently installing the new traffic lights. At Richmond and Fredricksburg, Virginia; Providence, Rhode Island; Washington, D. C.; and Lansing, Michigan, driver reaction to the giant signals is being tested. Highway officials in Michigan, Virginia, Missouri and California, also are conducting studies to determine the effectiveness of the 12-inch traffic lights.

For further information, write Crouse-Hinds Company, Wolf and Seventh North Streets, Syracuse, New York.

All-Craft Folding Steel Barricades

The ALL-CRAFT MANUFACTURING COMPANY, 5041M N. 124th Street, Butler, Wisconsin, announces a complete line of folding steel barricades from four to ten feet long combining heavy-gage steel top members with steel legs which fold into the tops to provide compact, easily handled units.

Two of the barricades can be easily carried and set up by one man. The legs lock in place, making the barricades sturdy and rugged.

Carrying handles and lantern hooks are welded into the top members and holes are provided for attaching electric "flasher" lanterns. Finished in glossy pavement yellow, either plain or striped, the barricades are easy to see under all light conditions.

The manufacturer states that they are competitive with wooden barricades in first cost and that their longer life and single-unit construction make them more economical to use.

Distribution is being established through direct factory representatives selling to equipment jobbers and rental firms, however, inquiries are being handled directly by the company pending the completion of a field organization.

A POEUM

If I were a little traffic light
Twinkling in a signal head
I'd think you not so very bright
If you drove by when I showed red.

Ano Nymous

SECTION NEWS

INDIANA SECTION

The Indiana Section will hold its Annual Meeting and election of officers on Thursday, April 14, in conjunction with the Forty-first Annual Purdue Road School which will be held April 11-14. Included among the Road School speakers are the following ITE members: **William S. Smith, Hallie L. Myers, John H. Bunch, Harold L. Michael, A. D. May, Wm. H. Bilby, James T. White, James B. Neff,** and **John E. Baerwald.**

The Indiana Section is also cooperating with the university in the planning and organization of the Third Annual Purdue Traffic Control Conference which is scheduled for Thursday and Friday, May 19 and 20. This year's conference will spotlight "The Parking Problem."

Five Purdue traffic engineering graduate students accompanied your reporter to the Illinois Traffic Engineering Conference held on the University of Illinois campus on March 3. It was a most enjoyable day and very encouraging to see so many ITE members present and active. We hope that there will be other Midwest Section members attending our sessions besides those we have placed on the program and **Larry Kane** who is an annual visitor. Needless to say all ITE members from all sections are welcome.

John E. Baerwald
Secretary-Treasurer

WESTERN SECTION

Clips Chopped from the WESTERN-ITE, **Bob Dunn,** Editor.

The power of the press is being employed to present some little known facts about our internationally known President, **J. Al Head.** If he wore boots, he would only stand halter-high to a horse. But this one thing is for sure Pardner, any man is going to have to cook his coffee awfully early in the morning to get ahead of **J. Al.**

Seldom has there been a state employee that devotes so much Energy, Effort and Enthusiasm to the activities of an extraneous non-profit professional organization, as does **Al Head.** For a man who so ably holds the position of Assistant Traffic Engineer with the Oregon State Highway Department and who is responsible for the personnel and administrative functions of both the Planning and Traffic Control Sections, **Al** must burn the midnight candle at both ends.

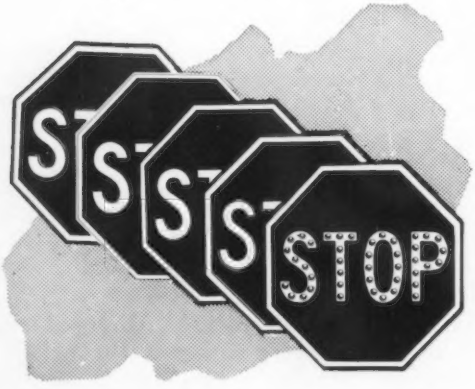
The exceptional organizational capabilities of the Man stems from his experience with the Pi Kappa Phi Social Fraternity. In this connection, he has served as Past National Secretary and as both Past and Incumbent District President.

Al is a born and bred Oregon Territory lad of some 41 skunk skinning seasons, who had to attend high schools in both Eugene and Portland before they would let him in Oregon State College and get away with a B.S.C.E. degree in 1939. **Al** started with the Oregon Highway Department in summer work as early as 1934, and has been with the organization ever since.

J. Al married **Elvira Jensen** in 1946, and they have two attractive young ladies, **Kathryn Jeanette,** 7½, and **Diane Louise,** 3½. (By Gum, Pardners, I I jest don't recollect if I rightly know what the **J** stands for.)

Chatter from Convention City

ITE representation at the ASCE National Convention was ably maintained by the following stalwarts seen at the sessions of the Highway Division: **Mel West, Grant Mickle, Bill McConochie, "Skinny" DeYoung, "Lucky" Luckenbach, Adolph Bahn, Jim Reading, Marty Bouman, Harmer Davis, Hal Durham, Ed Hall, Dick Gallagher, Joe Havenner, Paul Fowler, Stanley Lanham,** and **Brig. Gen. Frank Myers.**



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You can stop looking for *red stop signs* when you see the MIRO-FLEX line. That's because you're sure to find just the right sign for your community and your budget. Five standard models, all conforming to United States Public Roads Administration specifications, are available. They have rounded Series C, white letters—one-third the height of the sign on a red background. You have your choice of reflectorized letters, all-over reflectorization, or plain signs. With the exception of the aluminum model, they are made of 16-guage, zinc-coated, Bonderized steel. *Write for literature and prices on* MIRO-FLEX RED STOP SIGNS *and ask for catalog showing the complete traffic control sign line.*

THE MIRO-FLEX CO., INC.

1824 EAST SECOND ST. WICHITA, KANSAS

Paul Fowler, Mel West, Jim Reading, Dick Gallagher and **Ed Hall** attended the "ITTY" Road School sessions in Berkeley, February 2-4.

In conjunction with the Berkeley meeting, the Steering Committee of the Engineering Division of the Governor's Traffic Safety Conference enjoyed a dinner meeting. ITE members in attendance included **Ed Hall, Mel West, George Webb, Gran Parmelee, Dud Stevens** and **Barney Switzer.**

Ed Hall, San Diego County Traffic Engineer, has accepted an appointment as Transportation Research Director for the City of San Diego, effective March 1, 1955. The San Diego Metropolitan Area has been selected as one of the pilot locations for a comprehensive transportation study under the auspices of the National Committee on Urban Transportation. **Ed** also reports the completion of an Aerial Parking Study of a small rural community in San Diego County.

Conferences with **"Skinny" DeYoung, Red Matthews** and **Johnny Barker** are shifting into high gear now that contract time is nearing for the installation of the master control equipment in San Diego's new interconnected signal system.

With the addition of three new ITE and one new WITE members the strength of the San Diego Area has jumped 50% in the past year. **Don Robbins, Louie Clearwater** and **Charles Strong** work in **Mel West's** office, while **Hal Durham** is street lighting engineer on **Jim Reading's** staff.

Thar's Still Gold In Them Thar Mountains

Jack Brady and **Jack Henberger** hopped out to Colorado from the East and West Coasts respectively for the World Premiere of their company's new production in Slideascope heralding the dawn of a new era in expressway and turnpike signing. Following the film show, Messrs. **Pepper, Merriam** and **Rothweiler** accompanied the visitors to Canon City for a tour of the Penitentiary sign shop. Upon viewing the business cards of **Brady** and **Henberger** bearing reference to gas accumulators, locknuts and reflective signs, the Warden wasn't quite sure whether to escort the AGA representatives to (1) the State's Gas Chamber (2) a model security cell or (3) simply to assign them to the task of sewing reflector buttons on highway signs.

Another visitor of note to Colorado was **Ed Johnson** of the Automatic Signal Division of Eastern Industries. **Ed** brought no free samples or movie entertainment along with him so his visit rates little more than passing mention.

James R. Halverson, Chief Traffic Engineer of the State Road Commission of Utah releases news of Commission plans to paint a 4-inch solid yellow line, 18 inches in from the right edge of the pavement, on highway widths of 28 feet and over where the shoulder area is of similar surface.

Jack Bruce had a rare opportunity to enlighten the local citizenry about proposed and accomplished traffic control improvements in the City of Denver during a 4-hour tour by some seventy members of the Citizens' Bond Issue Committee, their wives and husbands.

Bob O'Connell has at long last found a qualified assistant to share his troubles in traffic engineering work for the Wyoming State Highway Department. The appointment went to **Howard Dickson,** formerly with the Highway Patrol, who received his training at the University of Wyoming and at the Northwestern Traffic School.

Bay Area By-Lines

Grant Mickle and **Bud Yost** attended the Berkeley Road Conference. The former visited Los Angeles and San Diego before returning to the ice in Washington, and the latter visited Los Angeles for the purpose of obtaining a free lunch as near as our foreign correspondent could determine.

Also attending the Berkeley Conference to escape the smog were such Angelenos as **"Skinny" DeYoung, Lamar Gardner, Dan Gerlough, Ralph Goodman, Al Hutchison, Guy McDonald, John W. McDonald, Gran Parmelee, Pete Rask** and **Roy Smith.**

Your Western Section Prexy and Veep, namely **Al Head** and **Al Hutchison,** took advantage of the Berkeley Conference to conduct a semi-annual Western Section Board Meeting and attend other committee meetings on both the WITE Annual Convention and the 1956 National Convention.

From deeper south in the southland **Gran Parmelee** reports that the Third Los Angeles Area dinner meeting was held at the L. A. Police Academy on Wednesday, January 26th, with 57 members and friends in attendance. Judge **Gerald C. Kepple** of the L. A. Municiple Court and **Harry V. Cheshire** of the Southern California Auto Club talked on legislative bills. The next meeting will be ladies' night and is planned for April.

Phlashes Phrom Phoenix

National Safety Council traffic inventory time is here once again and the Traffic Engineering Division in Phoenix is hard at work compiling the required information. Phoenix received the first place award in Traffic Engineering in Group VI for 1953 and so they are out once again for that first place plaque.

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MINNEAPOLIS 14, MINNESOTA

Several miles of main arterials in the city are being paved, and **Larry Thompson** is doing a splendid job working with the various contractors helping them to set up their barricades and to handle traffic in a safe manner. As in all western states, development has been so fast that a lot of work is done with the contractors trying to get them to handle traffic safely along with the construction work.

Bill Price, Traffic Engineer for the Arizona Highway Department, has just recovered from a rather serious illness, fortunately without the benefit of surgery. **Bill** has for some time been suffering from kidney stones, but the day before the operation was scheduled, nature took its course, and **Bill** has been one of the happiest fellows in Phoenix.

Chuck Haley has just completed work on the Zoning Ordinance in cooperation with the Planning Department. The amount of off-street parking necessary when buildings are constructed has been increased.

From Along the Santa Fe Trail

Francis Burton in Albuquerque has three new members lined up as well as a hoped for increase in his budget.

Wallace Braff—**Lloyd's** brother—has left the Houston Traffic Department for the Los Angeles Department.

The Texas Section had a swell meeting in Dallas January 21st and 22nd. **Win Carsten**, the transplant from the Western Section, feels that his first year in Dallas is a huge success. The Traffic Fatals in that city were 61, while the murders jumped to 85.

C. Harold Miller, Traffic Engineer of the City of Amarillo, writes that since he is geographically closer to the Western States than to Austin, he wishes to retain his name on the mailing list for WesternITE. (Sounds like a Rebel spy to me. Who ever heard of a Texan being closer to anything than Texas.—Ed.)

Northwest News and Views

A farewell party was held for **"Robby" Robinson** at the Top O'Scott Country Club in Portland on January 7th. Members of the Oregon Area presented **Robby** with a portable typewriter during the evening.

Multnomah County will install its first traffic signal in the near future.

It is reported that **"Squeege" Glaze**, Planning Engineer of the Department of Highways in Olympia, has recently returned from the East where he visited and inspected various toll road facilities.

Dick Long of the Washington Traffic Engineering Division is scheduled to attend the Bureau of Public Roads' School on Urban Design to be held in Portland during the week of February 28th.

E. E. Lewarch, City Traffic Engineer in Seattle, reports that all the WesternITE boys in his office, namely **Roy Sawhill, Myron Mitchell, Ed Mills, Bruce Culver** and **Bob Warr**, are busy devising one-way street systems that will operate on the arterial network of the central business district.

Jake Young visited Olympia recently to investigate Washington's method of snow removal on busy highways. This could mean that California is anticipating even worse weather conditions for the Rose Bowl in '56 than television viewers saw in '55.

The Oregon Area met at the Senator Hotel in Salem, February 11, with 38 members and guests in attendance. **Robert L. May, Jr.**, Assistant Legal Counsel for the Oregon Highway Commission, spoke on current highway legislation.

WesternITEs **Bruce Crandall, Al Head**, and other VIPS from the Oregon Highway Department spoke at length to the assembled Road Builders and Engineers at the Northwest Roads Conference in Corvallis. **Al** moderated while **Bruce** orated.

Tom Frater of Knappen, Tippetts, etc., was in Tacoma during the early part of February discussing a survey to be made of Tacoma port development.

Sports Section

Don Bergstrom reports that the Oregon area is in the process of picking its team for the second AWSGT. There have been so many entrants that qualifying rounds are being played to select the strongest team. He has the impunity to announce that in addition to Washington and California, it will take the rest of the Western Section combined to make up a team that will have a chance against this year's Oregon entry. (The Oregon strategy appears to be based solely on taking the 19th hole).

Joe Nadon in El Paso, another former WesternITE, showed **"Skinny"** how to get Mexican Hair Tonic across the Border from Juarez for Beverage Burpocess. (Hic-scuse me.)

A "bachelor" affair was given February 2nd by several Olympians for **Doug Sandland**, Highway Planning Division Graphic Artist and WITE cartoon contributor, who was married on February 5th. WITE members, **R. J. Hansen, Bob Curry** and **John Mladinov** and ITE applicants **P. S. Brown** and **Jim Small** attended.

New Officers

The Nominating Committee composed of **Donald S. Berry**, chairman, **Joseph E. Havenner, Fred T. Fowler** and **Herbert C. Higgins** has selected a roster of candidates for the 1955-1956 Western Section year. Members nominated are as follows:

President—**Alexander L. Hutchison.**

Vice-President—**Allan R. Pepper, Ellis L. Mathes.**

Secretary-Treasurer — **Melbourne H. West.**

METROPOLITAN SECTION

The newest newsletter on the scene, the METROPOLITAN SECTION NEWS, William E. Corgill, Editor, supplies the following:

Dear Member,

Your Newsletter Committee is proud to send you its FIRST EDITION of the Metropolitan Section News. The schedule has been set up for regular monthly issues, except for the midsummer months, July and August.

Please note that the regular NOTICE OF MEETING has been made a feature item in the Newsletter. Furthermore a brief report of the meeting just passed will be included to inform those who "just couldn't make it."

As with any new venture, it will be necessary to "feel our way along," dependent on our capable reporting staff for the bulk of material. In addition, however, YOUR HELP IS SO VERY IMPORTANT. Any item you think is fit to print, and of interest to some or all of the members, can be mailed or phoned to **Warren Quimby.**

YOUR NEWSLETTER COMMITTEE

Tunnel Catwalk Car Ready for Test

The Port of New York Authority has released information regarding its unique electric catwalk patrol car that will operate on a miniature railroad track, thus allowing four officers to cover the same tunnel posts now handled by six men afoot.

Costing $700,000, sixteen cars will be needed, four in each tube of the Lincoln and Holland Tunnels. Weighing 1300 lbs. they use 3 hp. motors.

New York Thruway Progress Out West

Nearing completion, the 12 million High Level Bridge, along Buffalo's waterfront, will soon be connected by a six-lane viaduct to other parts of this high-speed free-flowing CBD bypass route, part of the Thruway.

Erie County Plans Coordination

As reported by **Bill Magowan**, all of the 25 townships, plus 19 municipal subdivisions are considering joint traffic safety activities in Erie County, better to meet the needs of citizens totaling nearly a million.

Niagara Falls Has Acting T. E.

Adin Chase, a past-president of IMSA, is now acting Traffic Engineer for the Mecca of Honeymooners. Added to normal local congestion, the Falls has unique problems due to tourists numbering thousands annually.

Grin and Bear It (or . . . Wha Hoppen?)

Teke Wiley is currently receiving a great deal of attention from the medical profession. Seems he didn't give them enough anaesthetic during his reportedly successful operation involving removal of considerable double parking.

Dick Siver has some surplus sand he would like to dispose of. It can be inspected at the East Orange Exit of the Garden State Parkway.

Shorts from the Travel Bureau News

Ted Olcott presented a report based on his Yale thesis before the Operation Research Office of Johns Hopkins University on November 17. Its title was "The Influence of Vehicle Speed and Spacing on Tunnel Capacity."

Ed Wetzel has been very busy lately serving as an advisor to the General Clay Committee, whose report was just released regarding nation-wide highway needs plus estimated costs.

Pops Pass Panetellas at P.N.Y.A.

The PNYA family has a brace of cute additions to report:

Priscilla Mary MacDonald arrived on December 5, 7 lbs. 13 oz. of happiness for little sister **Maureen** and proud parents **Nancy** and **Bruce.**

Tommy Olcott now has what every boy needs (to make his life more complicated), a baby sister . . . **Nancy Milton Olcott** is a January 18 arrival tipping 8 lb. 4 oz. officially. Best wishes to planners **Ted** and **Mary.**

February Minutes

The fifth (luncheon) meeting of the New York Metropolitan Section of the Institute of Traffic Engineers was called to order by President Avins at 1:10 P.M. on February 16, 1955, at the Masonic Club. Twenty-four members and guests were present. After the self-introductions the Minutes of the previous meeting (January 20, 1955) were read and accepted.

Our speaker, **Dr. Max Tamir,** New York City Department of Traffic, talked on the subject of "Schools and Traffic in Major Cities." **Dr. Tamir** pointed out that when the Traffic Engineer is brought in on a problem involving school crossings, he is presented with a "fait accompli." He urged that Traffic Engineers be brought in on school planning from the beginning. Using examples, he brought out the three factors in school planning that affect the traffic problem. These are the school district, actual site selection and the physical layout. School districts are generally laid out with no relation to the type of streets through the district, As a result, many districts are bisected by heavily traveled streets which the school children have to cross. Actual sites selected within specified districts are not chosen with any thought as to the relationship between the area the children come from and the location of major streets. The actual layouts of the school buildings and property itself is often done without regard to the traffic problem. Entrances and exits to the school and playgrounds are not coordinated with street pattern.

$600 Million in Bonds Now Issued On the New York State Thruway

Sale during December of a new $50 million general revenue bond issue brought to $600 million the total borrowings thus far for the New York State Thruway Authority.

The Authority has in operation 366 miles of its 427-mile Buffalo to New York section of its total expressway system, with another 30 miles between Suffern and Newburgh area expected to be opened by the start of 1955.

Third Major Toll Road Planned for New Jersey

A third major New Jersey toll road, a four-lane, east-west highway spanning more than 50 miles from near Atlantic City to the vicinity of Camden, is in the planning stages. Preliminary engineering studies indicate a 51-mile stretch of the road would cost $55 million.

From Newark — It Works!

Ed Cyr reports that his new traffic flow scheme, placed in operation on January 24th on Raymond Boulevard for a nine-block run in downtown Newark is working smoothly. From 7 to 9 A.M. the Boulevard operates eastbound, from 4 to 6 P.M. westbound, and during the remainder of the day two-way. All this is accomplished by time-clock operated animated "ONE WAY" signs. In these signs the arrow shank is red and reads "ONE WAY" and green arrowheads are displayed at either end of the shank as required. Travel time on the Boulevard has been greatly reduced and **Ed** advises that they are considering extension of this type control to other thoroughfares.

Advancements at the Port Authority

On February 7th **Ted Olcott** assumed the position of Project Coordinator for Arterial Facilities in the Port Development Department. **Bob Roy** moved into **Ted's** former position of Assistant Highway Planning Engineer. Congratulations to both.

MICHIGAN SECTION

The January meeting of the Michigan Section was called to order by President **Kansman.** New members were introduced, among whom was the new Traffic Engineer of Pontiac, Mr. **Theo-**

Cataline Reflective Pavement Marking Costs Less

Investigate the economy of Cataline Reflective Striping Compound. It's easy to apply, too.

You can cut your pavement marking costs because Cataline Super-Reflective Striping Compound lasts 50% longer than ordinary traffic paint. This longer effective life is due to millions of tiny, crystal clear, optical crown glass beads premixed with or dropped on the Cataline super-tough, weatherproof, plastic latex rubber binder. Unusual brilliance night and day.

Application is made on any pavement surface with any gravity or pressure (spray) striping machine or by brush. Use bead dispenser attachment if Drop-on Combination is preferred. Super-fast drying—will not track after 6 minutes; dry in 20 minutes. Available in white or Federal yellow. Write for illustrated catalog. Try Cataline on your next job.

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dore **Vanderstempel**, recently of Chicago.

The minutes of the meetings held on October 27 and December 1, 1954, were read by Vice-President **Gervais**, and were approved. President **Kansman** read a letter from **Tim Todd** regarding the status of the proposed MATSON MEMORIAL FUND, and then told the group that he had received letters from both **Mrs. Matson** and from **Mrs. Harold Saver.**

Joe Wehmeyer announced that **Bayard Clark** had broken his leg, although there were no further details on the accident.

The meeting was turned over to Program Chairman **Harold Hickman** who introduced the guest speaker, Mr. **Arthur Summerfield, Jr.** Mr. **Summerfield's** talk was titled "Let's Keep the Facts in Focus," and pertained to some interesting statistics and recent developments in the Federal Government.

After the guest speaker had concluded his talk, a number of special door prizes were awarded to some of the more fortunate guests.

Before breaking up the meeting, Mr. **Hickman** requested that the more hardy individuals remain to watch a "blood and guts" type of State Police film.

MIDWEST SECTION

Clipped from MIDWEST ITE°MS, Richard A. Walons, Editor:

Meet Evan Olmstead

The first week **Evan Olmstead** started to work for the Chicago Surface Lines as a student electrical railway engineer back in 1936, he had an accident while driving a streetcar that almost ended his career. The Surface Lines was operating a heavy schedule (two streetcars) on Orleans Street, and as **Evan** came to a stop there was a grinding crash. **Evan** claims to this day that the other streetcar was backing down the tracks sideways and ran into the front of his streetcar. Thus the filing of his accident report was one of his first experiences in the work of traffic engineering.

Evan was born on June 14, 1914 in Evanston, Illinois and moved to Burma where his parents were missionaries. After 15 years he returned to later enroll in the University of Illinois where he received his degree as an electrical railway engineer. During his college days he met his lovely wife **Jean**, who was atending classes at the University also, and as a result of a well-planned courtship they were married in 1936.

Upon completion of his student engineering program, he started to work under **Bill McConochie** as assistant traffic engineer. This was his second experience in the field of traffic. In February, 1941, the Army needed his ability to get a big job done. As a result, when the war was over he was discharged a lieutenant colonel. After the service he went back to the Chicago Surface Lines and worked as an automotive engineer. Two years later he became specifications engineer where he gained recognition throughout the Surface Lines. As a result of his past experience in traffic engineering and his record of doing a good job, he was asked to take over the Traffic Engineering Department of the CTA in 1950.

Some of his greatest achievements in this department were the transit estimate study for Washington Street regarding the feasibility of transit lanes and his work toward the establishment of Rapid Transit right-of-way in the Northwest Superhighway.

In 1950 he joined the Midwest Section of the Institute of Traffic Engineers and in 1951 became a member of the national organization. He is also a member of the Western Society of Engineers and presently is the chairman of the Traffic and Street Planning Section of the Executive Committee.

Announcing
The Ametron
ELECTRIC EYE TRAFICOUNTER
—Automatically counts vehicles whenever photo electric beams are broken!
—Ruggedly constructed for permanent, year-round operation—in any weather!
—Prints totals each hour and resets to zero!
—Identifies counts with printed record of exact hour—day or night!
A new vehicle counting and recording instrument which fulfills exacting requirements in installations where conventional roadbed type detecting elements are not desired. A permanent station type, capable of counting up to 1000 pulses per minute. The magnetic counter is solenoid advanced, once for each contact closure (whenever there is an interruption in the light field). Consists of following detector components: two Photocell Excitor Lamps, a transformer for stepping down power supply voltage, a "chopper" to provide light field oscillating characteristics, a lens and mirror assembly, and an amplifier.
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Active in community life, he is also on the plan commission for his home town, Arlington Heights, Illinois. He golfs in the 150's and bowls in the 90's (or is it vice versa).

As you talk to him, he tries to convince you that his success in the traffic engineering field was brought about by a series of lucky breaks and that there was always someone else giving him a little push up the ladder, but engineers who have worked and associated with him always tell the story of his fine ability and conscientious approach in anything he participates in.

Welcome, Mr. President.

Volk Named Director

Pursuant to provisions of the Section Constitution, the Section Board appointed **Wayne N. Volk** Director to fill the vacancy arising from the death of Howard F. Ilgner. Mr. Volk, traffic engineer for the State Highway Commission of Wisconsin, wil serve the remainder of the term which expires at the end of 1955.

Moon Soon—Maybe

Round trip ticket to the Moon? Well, not yet, but Midwest Section members found out how really close to that possibility we were.

At the February 17th meeting, **Kenneth Jacobs**, rocket expert extraordinary, unfolded the story of space travel —how and why it will some day occur. Beginning with a history of rocket development, **Mr. Jacobs** threw a scare into the membership by running through some of the many complex formulas governing space travel. Getting back to things we could understand, he explained the problems of getting out of the earth's gravitational field, hitting a target such as the moon, and landing. Space stations and flying saucers also received their due consideration. Our compliments to **Ralph Michel** for setting up this, his last (so he says), section program.

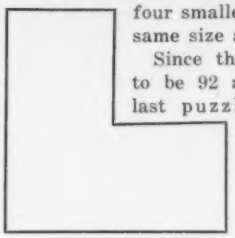
The interest of the topic was demonstrated by the many questions from the 40 members present. Opinions on the controversial subject were many and varied, but we do have it on good authority that the Membership Committee will investigate chances of a Midwest Section branch on the Moon and the Special Events Committee is planning our annual entourage there in 1990. Somebody get that Rocket Scenicruiser ready, quick.

Almost the Ultimate

DeLeuw Cather and Co. quarters at 150 N. Wacker Drive are undergoing extensive refurbishment for the comfort of clients and staff. The lower level is being fitted as a plush conference room with picture windows along the Chicago River. We understand that docking facilities are available for yachts belonging to staff members. All in favor of Section yachting parties may be heartened to know that one yacht is available already. However, guests are advised to bring outboard motors if they want speed.

Puzzle Corner

Divide the area shown below into four smaller areas, all the same size and shape.



Since there turned out to be 92 answers to the last puzzle we printed, we think it might not be too wise to try to print them all. Drop us a

INSTITUTE OF TRAFFIC ENGINEERS

New Members and Transfers

The following applications have been received since the list of applicants published in February.

APPLICATIONS FOR TRANSFER

CHAMBLISS, Jack Windham
Assistant Traffic Control & Safety Engineer
Mississippi State Highway Department
709 Woolfolk State Office Building
Box 1850
Jackson, Mississippi
February 28, 1955 for MEMBER grade

GOODWIN, Charles Alfred
Traffic and Transportation Engineer
Liberty Mutual Insurance Company
175 Berkeley Street
Boston 17, Massachusetts
February 14, 1955 for MEMBER grade

LINGLE, Myron Kendall
Assistant Engineer of Traffic
Illinois Division of Highways
Springfield, Illinois
February 18, 1955 for MEMBER grade

MOGREN, Edward Gordon
Sales Engineer
Automotive Signal Division
Eastern Industries, Inc.
East Norwalk, Connecticut
February 16, 1955 for ASSOCIATE grade

MOHR, Eric Arthur
Associate Transportation Engineer
California Public Utilities Commission
State Building, Civic Center
San Francisco 2, California
February 7, 1955 for ASSOCIATE grade

WILLIAMS, Earl C., Jr.
Traffic Engineer
City of Wichita Falls
Memorial Auditorium
Wichita Falls, Texas
March 10, 1955 for ASSOCIATE grade

NEW APPLICATIONS

BELL, Douglas Graham
Sales Engineer
Bell and Gustus, Inc.
4328 Elston Avenue
Chicago 41, Illinois
March 18, 1955 for JUNIOR grade

BILEK, Robert Frank
Traffic Service Supervisor
Chicago Park District
425 E. 14th Street
Chicago, Illinois
March 16, 1955 for ASSOCIATE grade

BURLESON, Joe Merritt
Assistant Director of Street Transportation
City of Omaha, 607 City Hall
18th and Farnam
Omaha, Nebraska
February 18, 1955 for JUNIOR grade

CARROW, William Reynolds
Assistant Traffic Engineer
Delaware State Highway Department
152 South State Street
Dover, Delaware
February 15, 1955 for JUNIOR grade

CORBETT, Bernard Agustus, Jr.
Traffic Engineer & Planner
Engineering Department
City Hall
Burlington, North Carolina
March 10, 1955 for JUNIOR grade

FLORES-ABREU, Andres
Traffic and Planning Engineer
Puerto Rico Department of Public Works
Stop 22½ Ponce de Leon Avenue
Santurce, Puerto Rico
March 18, 1955 for JUNIOR grade

FRINK, Leslie Merle
Civil Engineer Assistant
Los Angeles County Road Department
108 West 2nd Street
Los Angeles 12, California
March 15, 1955 for JUNIOR grade

GUSTUS, Oscar Truman
Sales Engineer
Bell & Gustus, Inc.
4328 Elston Avenue
Chicago 41, Illinois
March 7, 1955 for JUNIOR grade

HENDRICK, Roe Palmer
Graduate Student
Yale Bureau of Highway Traffic
Strathcona Hall
New Haven 11, Connecticut
February 23, 1955 for JUNIOR grade

MENGILIBORU, Sedat
Chief of Traffic Safety Division
General Directorate of Highways
Karayollari Umum Md. Trafik Fen Heyeti Md.
Ankra, Turkey
February 7, 1955 for ASSOCIATE grade

MORALES, Edwin Cuebas
Civil Engineer
Bureau of Traffic, Department of Public Works
Stop 23
Santurce, Puerto Rico
March 16, 1955 for JUNIOR grade

MURIS, Charles E.
Traffic Engineering Designer
Chicago Park District
425 E. 14th Boulevard
Chicago 5, Illinois
March 7, 1955 for JUNIOR grade

POLLARD, William Sherman, Jr.
Chief Engineer
Harland Bartholomew and Associates
317 North Eleventh Street
Saint Louis 1, Missouri
February 24, 1955 for ASSOCIATE grade

ROSENFIELD, David
Graduate Assistant, Joint Highway Research Project
Purdue University
Lafayette, Indiana
February 15, 1955 for JUNIOR grade

SOLOMON, David
Highway Transport Research Engineer
Bureau of Public Roads, Room 3035
Washington 25, D. C.
March 9, 1955 for JUNIOR grade

SORENSON, Jack Leslie
Traffic Engineering Designer
Chicago Park District
425 East 14th Street
Chicago, Illinois
March 18, 1955 for ASSOCIATE grade

TRAVERS, Warren
Traffic Engineer
Edwards, Kelcey and Beck
3 William Street
Newark 2, New Jersey
February 16, 1955 for ASSOCIATE grade

WATT, James Ernest, Jr.
Assistant Design Engineer
Charles A. Maguire & Associates
1100 Turks Head Building
Providence, Rhode Island
March 2, 1955 for JUNIOR grade

WILEY, Eric Samuel
Traffic Coordinator
City of Windsor
City Hall Annex
950 Chilver Road
Windsor, Ontario, Canada
February 21, 1955 for JUNIOR grade

line if you'd like to see them. Credit for correct solutions go to **Dick Kanak, Bob Harris, Jim Hunnicutt, Ted Siegel, Dale Humphrey, Warren Brandt,** and **Mike Hartigan.** Hope that they and many more can send us the solution to this month's.

Bowlers??

In the flurry of this work-a-day world not much mention, in fact no mention at all, has been made of the fact that a group of local section members have been bowling as a team in the Bureau of Engineering league for three seasons now. They have adopted the simple, but definitive name, Traffic, for their team. It is a title well taken, since in the main they represent the T. E. Dept. at C. T. A. Individually they are: **Evan Olmstead** (capt.), **Frank Barker, Jr., Vince Donahue, Bill Kendall,** and **Fred Potenza.** The only non-T.E. on the team is **Frank Barker, Sr.,** who happens to be an elder statesman of the C.T.A.

Oh, yes, another member of the Section, **Mike Hartigan,** is bowling in the league at present, but since neither he nor his team is going anyplace, it hardly seems worth the mention.

Parking Relief Here

The City of Chicago's $50,000,000 Parking Revenue Bond Program is rolling along in high gear with 11 of the 16 planned facilities already in operation and a number of others either on the drawing board or in various stages of construction.

City Loses Kelly

Robert J. Kelly, Superintendent of Parking for the City of Chicago, was busy receiving congratulations from fellow members of Midwest ITE after he revealed that he had accepted a post in Cleveland as that city's first combination traffic engineer and parking commissioner.

New Midwest-ites

Membership of Midwest Section of ITE was increased by five during recent weeks. A hearty welcome is extended to the newcomers with the hope that they will find participation in Section activities profitable and enjoyable.

The group includes **Phil Linscott** and **Lawrence Dondanville,** employed by DeLeuw Cather and Company; **Art Dierstein,** traffic engineer, District 3, Illinois Division of Highways, Ottawa, Ill.; **Bob Zralek,** who toils for the Chicago Bureau of Street Traffic; and **Gerhart King,** transferee from New York, now on the District 10 staff, Illinois Division of Highways, Chicago.

Highway Conference

The 41st Annual Highway and Traffic Engineering Conference was held March 1st to 3rd at the University of Illinois in Champaign, and again traffic engineers from the Midwest Section played prominent roles in its success.

Chairman of the Traffic Engineering Section was **Harry Harrison.** On the program were **Ralph Michel** (radio control of traffic signals), **Cecil Chenoweth** (channelization), **John Leek** (trends in vehicular volumes), and a panel composed of **Harry Harrison, Bill Marston, Dick Fencl,** and **Matt Sielski.** Two hundred were registered for the sessions.

At Ladies' Nite

Whatever became of **Powill's** and **Koert's** petticoat survey? Rumor has it they're going to sell it to the City of Chicago under **George Barton's** name. . . . Did anyone notice the way **Ralph Gross** kept his eye on that hour-glass figure during his speech? . . . **Charlie Michalski** says that all unused bar tickets may be redeemed at the Citizen's Traffic Safety Board for an attractive three-color decalcomania . . . Hope everyone noticed **Jim Hunnicutt's** direct male advertising. . . . Those bright flashes were **not** from the drinks, but just **Larry Kane's** flashbulbs. . . . Did everyone catch **Charlie Mele** doing the Italian Mambo, while **Ted Siegel** did the Mambo Italiano? . . . And how come **Dick Fencl** can do a polka to **any** kind of music? . . . Understand **Dick Kanak** was playing cards with certain others in the dining room (place cards that is). Doesn't do much good to have an arrangement, does it **Dick?** . . . No one consoled **John Zimmerman** about the loss of his accustomed place at the tail end of the ITE roster to **Bob Zralek.** Anyone whose name is **Zzyzgy** could get it for keeps . . . There's a new movie in town which **Mike Hartigan** says we shouldn't miss. Title: "The Long Gray Line." His review: the story of **Joe Prismo's** early efforts.

Letters to the Editor

Sir:

Thank you very much for your kindness in publishing my letter of December 31, 1954 in the February 1955 issue of TRAFFIC ENGINEERING, and for your editorial in its regard.

You certainly have been long-suffering, and have bent over backwards in an attempt to treat the matter fairly. I certainly have no corner on the brain market; and I do not minimize the great contributions of Henry Haugh. If only you had omitted your last paragraph about the 1921 Glenarm installation!

There are many traffic-actuated installations in service on city street-intersections where street cars running on rails actuate the signals through the medium of track-circuits or trolley contractors. And there are numerous installations of traffic signals at street intersections adjacent to railroad crossings in which the same signals are controlled by approaching trains as well as by autos. So, what's the difference?

The Glenarm 1921 signal per se was a street traffic semaphore exactly like those installed at city street intersections in vogue in 1921. *It was supposed to be a traffic signal.* It transferred right-of-way between highway and railroad. And in addition to the trains, it was actuated by an automobile which ran on the track. Thus, it was the first vehicle-actuated traffic signal.

Thanks again for your kindness, and my best regards to you.

CHARLES ADLER, JR.
Baltimore, Maryland

Sir:

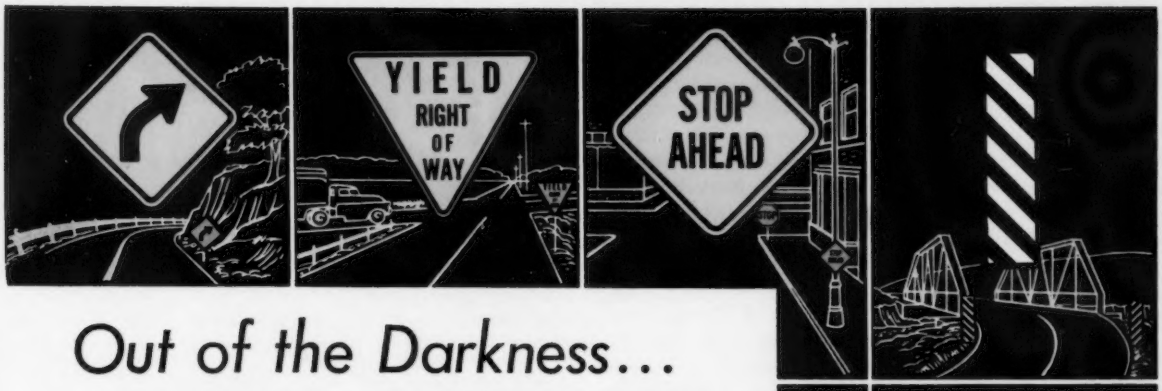
You probably noticed a press report late last year announcing that at our Annual Conference held in Adelaide during October, the Australian Automobile Association decided to provide up to $13,000 per annum for a period of five years for the establishment of a Chair of Traffic Engineering at an Australian State University to be nominated by the Prime Minister.

The A.A.A. has long considered that the absence of specialist training facilities for men who might otherwise take up traffic engineering as a career has been one of our major handicaps. The State Universities have certainly not been lacking in interest so far as this phase of engineering is concerned, but shortage of funds has prevented them from introducing a course of specialized studies.

Now that the funds have been made available, we hope that the University yet to be nominated will provide a post-graduate course for an appropriate degree or civil engineering, and that in future years all State cities will have Departments of Traffic Engineering as part of their administration.

The purpose of this letter is to formally advise you of the action which we have taken and to let you know that we expect the Prime Minister to nominate the State University at which the Chair is to be established shortly after his return from overseas.

L. STRUDWICK
Secretary
Australian Automobile Association
Sydney, N.S. W.



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PARKING SPACE DEVELOPMENTS AROUND THE NATION

(Continued from page 278)

employes at $5-a-month fees. The tract is currently rented from the city for $3,780 a year by a parking lot operator.

OHIO: A pending state legislative proposal would create a commission to finance, construct and operate a parking facility under the statehouse grounds in Columbus. Revenue bonds would be issued to finance the project, which would accommodate between 1,200 and 1,500 cars.

Meanwhile, the city of Columbus took a long step toward solving its parking problem by opening a new $1,450,000 Long Street parking garage with a capacity of 577 cars.

SOUTH DAKOTA: Enabling legislation for city parking facilities was given final passage by the South Dakota legislature and sent to the governor for signature.

The approved bill permits cities to build ramp and other parking facilities and also provides that municipalities may lease the structure for 40-year periods to private operators.

Clarifying the present law on revenue bonds and other means of financing parking facilities, the measure was sought by the Sioux Falls City Commission and Chamber of Commerce and was endorsed by representatives of other large South Dakota cities.

UTAH: Proposed state legislation would permit cities to own, operate or lease off-street parking facilities.

WASHINGTON: Proposed state legislation would permit the Seattle City Transit System to operate off-street parking lots along bus routes. The bill also would allow the transit agency to lease lots to anyone for the purpose of aiding the system.

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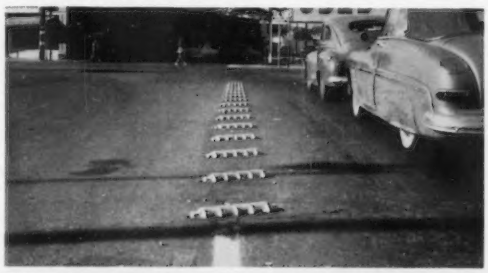

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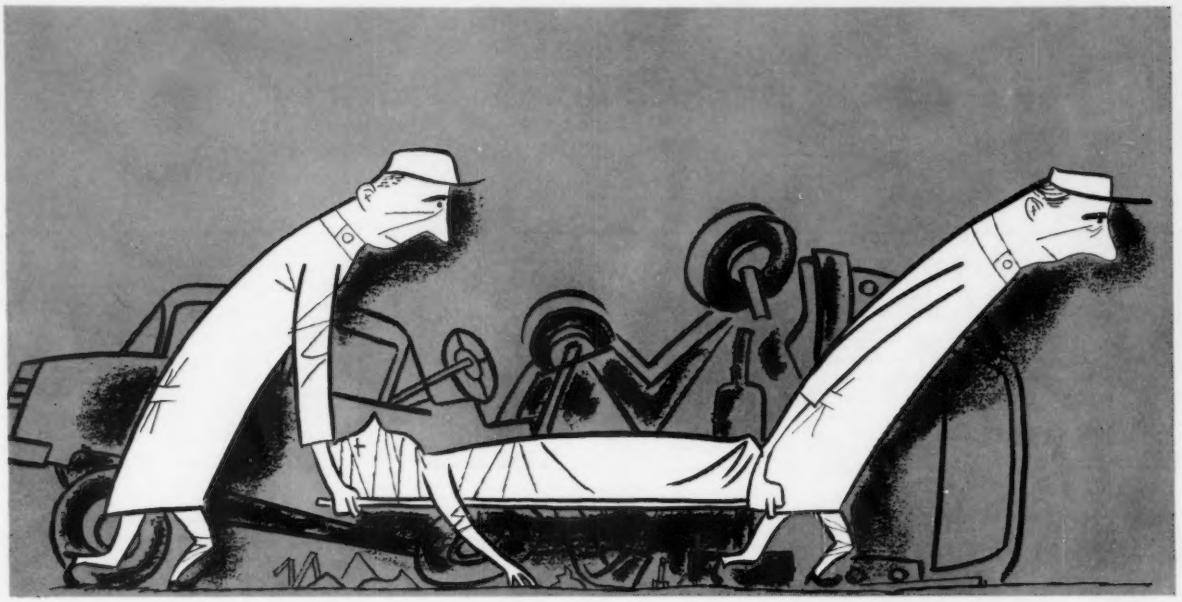

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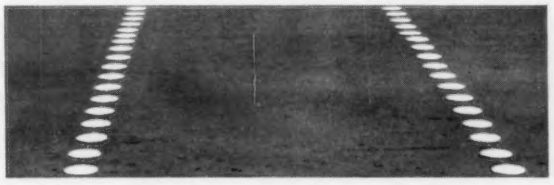

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